Case serial number: **10563278**
Class / Subclass(es):
Earliest Priority Filing Date:
Format preferred for results:
Attachment: **No.**
Search Topic Information:
Please search a composition comprising: xenon (5-35% by volume) nitrous oxide (10-50 % by volume)
Special Instructions and Other Comments:

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L27           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  XENON/CN
L28        2588 SEA FILE=REGISTRY ABB=ON  PLU=ON  XENON
L29        2587 SEA FILE=REGISTRY ABB=ON  PLU=ON  L28 NOT L27
L30           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  "NITROUS OXIDE"/CN
L31          48 SEA FILE=REGISTRY ABB=ON  PLU=ON  NITROUS OXIDE?/CN
L32          47 SEA FILE=REGISTRY ABB=ON  PLU=ON  L31 NOT L30
L33             SEL  PLU=ON  L27 1- CHEM :       3 TERMS
L34       50875 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L33
L35       53583 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L34 OR L29 OR XENON?
L36             SEL  PLU=ON  L30 1- CHEM :      18 TERMS
L37       33962 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L36
L38      117226 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L37 OR L32 OR NITROUS
                OXIDE/CV OR (DINITROGEN OR NITROGEN OR NITROUS)(A)OXIDE
L39         320 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L35(L)L38
L40     4010142 SEA FILE=HCAPLUS ABB=ON  PLU=ON  COMPN./CV OR COMPOSITION OR
                MIXTURE
L41        3756 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L40(L)L35
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L42 6003 SEA FILE=HCAPLUS ABB=ON PLU=ON L40(L)L38
L43 49 SEA FILE=HCAPLUS ABB=ON PLU=ON L41 AND L42 AND L39

=> d ibib abs hitstr l43 1-49

L43 ANSWER 1 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2008:341401 HCAPLUS Full-text
TITLE: Cluster-type blank mask and methods for manufacturing the blank mask and photomask
INVENTOR(S): Nam, Gi Su; Seo, Seong Min; Lee, Hyeong Jae; Kang, Geung Won
PATENT ASSIGNEE(S): S & S Tech Co., Ltd., S. Korea
SOURCE: Repub. Korean Kongkae Taeho Kongbo, 8pp.
CODEN: KRXXA7
DOCUMENT TYPE: Patent
LANGUAGE: Korean
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
KR 2008017785	A	20080227	KR 2006-79416	20060822
PRIORITY APPLN. INFO.:			KR 2006-79416	20060822

AB A method for manufacturing a cluster type blank mask comprises: (1) mixing a metal or metal-containing target, inert gases (such as argon, helium, neon and xenon) and active gases (such as carbon monoxide, carbon dioxide, nitrogen monoxide, nitrogen dioxide, nitrous oxide, oxygen, nitrogen, fluorine, methane and ammonia), (2) performing cluster-type reactive sputtering or vacuum deposition for the mixture to form a shielding film or an anti-reflective film or a shielding and an anti-reflective film orderly on a transparent substrate, and (3) coating resist on the shielding film or the anti-reflective film. Particles of the blank mask used for manufacturing a photomask are easily removed, and thus particles generated in a photomask manufacturing process can be removed. Before/after the formation of a metal film, the adhesive force and growing ability of the metal film can be improved, and the chemical resistance can be also improved.

L43 ANSWER 2 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:386156 HCAPLUS Full-text
DOCUMENT NUMBER: 147:109857
TITLE: Xenon mitigates isoflurane-induced neuronal apoptosis in the developing rodent brain
AUTHOR(S): Ma, Daqing; Williamson, Peter; Januszewski, Adam; Nogaro, Marie-Caroline; Hossain, Mahmuda; Ong, Lay Ping; Shu, Yi; Franks, Nicholas P.; Maze, Mervyn
CORPORATE SOURCE: Department of Anaesthetics, Pain Medicine and Intensive Care, Imperial College London, London, UK
SOURCE: Anesthesiology (2007), 106(4), 746-753
CODEN: ANESAV; ISSN: 0003-3022
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Anesthetics, including isoflurane and nitrous oxide, an antagonist of the N-methyl-D-aspartate subtype of the glutamate receptor, have been demonstrated to induce apoptotic neurodegeneration when administered during neurodevelopment. Xenon, also an N-methyl-D-aspartate antagonist, not only

lacks the characteristic toxicity produced by other N-methyl-D-aspartate antagonists, but also attenuates the neurotoxicity produced by this class of agent. Therefore, the current study sought to investigate xenon's putative protective properties against anesthetic-induced neuronal apoptosis. Sep. cohorts (n = 5 or 6 per group) of 7-day-old rats were randomly assigned and exposed to eight gas mixts.: air, 75% nitrous oxide, 75% xenon, 0.75% isoflurane, 0.75% isoflurane plus 35% or 75% nitrous oxide, 0.75% isoflurane plus 30% or 60% xenon for 6 h. Rats were killed, and cortical and hippocampal apoptosis was assessed using caspase-3 immunostaining. In sep. cohorts, cortices were isolated for immunoblotting of caspase 3, caspase 8, caspase 9, and cytochrome c. Organotypic hippocampal slices of postnatal mice pups were derived and cultured for 24 h before similar gas exposures, as above, and subsequently processed for caspase-3 immunostaining. In vivo administration of isoflurane enhances neuronal apoptosis. When combined with isoflurane, nitrous oxide significantly increases whereas xenon significantly reduces apoptosis to a value no different from that of controls. In vitro studies corroborate the ability of xenon to attenuate isoflurane-induced apoptosis. Isoflurane enhanced expression of indicators of the intrinsic and common apoptotic pathways; this enhancement was increased by nitrous oxide but attenuated by xenon. The current study demonstrates that xenon prevents isoflurane-induced neonatal neuronal apoptosis.

IT 10024-97-2, Nitrous oxide, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(xenon mitigates isoflurane-induced neuronal apoptosis in developing rat brain)

RN 10024-97-2 HCAPLUS

CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 3 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:1339071 HCAPLUS Full-text

DOCUMENT NUMBER: 144:161156

TITLE: Development of xenon recycling and supply system for high quality nitride film processing

AUTHOR(S): Satou, Takayuki; Yamawaki, Masaya; Hasegawa, Hideharu; Ishihara, Yoshio; Ohmi, Tadahiro; Shirai, Yasuyuki; Teramoto, Akinobu; Hirayama, Masaki

CORPORATE SOURCE: Electron. Mech. Div., Taiyo Nippon Sanso Corporation, Japan

SOURCE: Taiyo Nissan Giho (2005), 24, 22-27
CODEN: TNGACS

PUBLISHER: Taiyo Nissan K. K., Gijutsu Honbu, Giho Henshu Jimukyoku

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB For the high quality gate dielecs. formation process in advanced ULSI, the microwave-excited plasma using xenon (Xe) is effective. In order to apply Xe plasma processing to semiconductor industry, Xe recycle technol. which can recycle Xe on site is essentially important. Xe recovery and supply system treats exhaust gas including argon (Ar), nitrogen (N2), ammonia (NH3), oxygen (O2), nitrogen oxide (NO)x and hydrogen (H2) from by a nitride film formation

processing, and supplied mixture gas (mixture ratio 7:3) of Xe and Ar to Xe plasma equipment after impurity removal. This system consists of pretreatment unit, Xe recovery unit and Xe condensing unit, and removes each impurities ingredient at each units. By evaluating of this system, the items showed below were confirmed. (1) The removal performance of NH3, O2, NOx and moisture (H2O) of pretreatment unit in this system can satisfy the specifications of supply gas. (2) This system can supply gas in which Xe concentration is at 70 ± 2%. (3) This system obtains the high recovery ratio of over 99.9%. (4) The separation performance of N2 and H2 of Xe recovery unit and Xe condensing unit in this system can satisfy the specifications of supply gas.

L43 ANSWER 4 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:953091 HCAPLUS Full-text
DOCUMENT NUMBER: 143:419280
TITLE: Xenon Acts by Inhibition of Non-N-methyl-D-aspartate Receptor-mediated Glutamatergic Neurotransmission in Caenorhabditis elegans
AUTHOR(S): Nagele, Peter; Metz, Laura B.; Crowder, C. Michael
CORPORATE SOURCE: Department of Anesthesiology, University of Vienna, Vienna, A-1090, Austria
SOURCE: Anesthesiology (2005), 103(3), 508-513
CODEN: ANESAV; ISSN: 0003-3022
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Electrophysiol. expts. in rodents have found that nitrous oxide and xenon inhibit NMDA-type glutamate receptors. These findings led to the hypothesis that xenon and nitrous oxide along with ketamine form a class of anesthetics with the identical mechanism, NMDA receptor antagonism. Here, the authors use Caenorhabditis elegans to determine whether xenon, like nitrous oxide, acts by a NMDA receptor-mediated mechanism. Xenon:oxygen mixts. were delivered into sealed chambers until the desired concentration was achieved. The effects of xenon on various behaviors were measured on wild-type and mutant C. elegans strains. With an EC50 of 15-20 vol% depending on behavioral endpoint, xenon altered C. elegans locomotion in a manner indistinguishable from that of mutants in glutamatergic transmission. Xenon reduced the frequency and duration of backward locomotion without altering its speed or other behaviors tested. Mutation of glr-1, encoding a non-NMDA glutamate receptor subunit, abolished the behavioral effects of xenon; however, mutation of nmr-1, which encodes the pore-forming subunit of an NMDA glutamate receptor previously shown to be required for nitrous oxide action, did not significantly alter xenon response. Transformation of the glr-1 mutant with the wild-type glr-1 gene partially restored xenon sensitivity, confirming that glr-1 was necessary for the full action of xenon. Xenon acts in C. elegans to alter locomotion through a mechanism requiring the non-NMDA glutamate receptor encoded by glr-1. Unlike for the action of nitrous oxide in C. elegans, the NMDA receptor encoded by nmr-1 is not essential for sensitivity to xenon.
REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 5 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:100376 HCAPLUS Full-text
DOCUMENT NUMBER: 142:191298
TITLE: Inhalable gaseous drug based on xenon and nitrogen oxide for treating neurotoxicity resulting from excess neurotransmitters
INVENTOR(S): Lemaire, Marc; Abraini, Jacques

PATENT ASSIGNEE(S): Air Liquide Sante International, Fr.
SOURCE: Fr. Demande, 21 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2858233	A1	20050204	FR 2003-50383	20030730
FR 2858233	B1	20080411		
AU 2004260859	A1	20050210	AU 2004-260859	20040723
CA 2533499	A1	20050210	CA 2004-2533499	20040723
WO 2005011711	A2	20050210	WO 2004-FR50352	20040723
WO 2005011711	A3	20050506		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1651243	A2	20060503	EP 2004-767913	20040723
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
CN 1829522	A	20060906	CN 2004-80021535	20040723
JP 2007500174	T	20070111	JP 2006-521634	20040723
US 20070053992	A1	20070308	US 2006-563278	20061006

PRIORITY APPLN. INFO.: FR 2003-50383 A 20030730
WO 2004-FR50352 W 20040723

AB The invention relates to use of a gas mixture containing xenon and nitrogen oxide, and also oxygen, to manufacture an inhalable drug to prevent or treat neurotoxicity in man. The xenon/nitrogen oxide mixture acts at the level of the neurotransmitter receptors by decreasing the effects or release of neurotransmitters including dopamine, glutamate, serotonin, taurine, GABA, and noradrenaline. The proportion of xenon by volume in the mixture is 5-45%, and the proportion of nitrogen oxide is 10-50%, with the remainder being oxygen.

IT 835878-44-9
RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(inhalable gaseous drug based on xenon and nitrogen oxide for treating neurotoxicity resulting from excess neurotransmitters)

RN 835878-44-9 HCAPLUS
CN Nitrogen oxide (N2O), mixt. with xenon (9CI) (CA INDEX NAME)

CM 1

CRN 10024-97-2
CMF N2 O

O═N═N

CM 2

CRN 7440-63-3
CMF Xe

Xe

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 6 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:984824 HCAPLUS Full-text
DOCUMENT NUMBER: 141:416134
TITLE: Method and device for the controlled admixing of a gas or a mixture of gases with a stream of gas or gas mixture in medical use
INVENTOR(S): Fritz, Markus; Krebs, Christian; Muellner, Rainer; Romako, Christian
PATENT ASSIGNEE(S): Ino Therapeutics G.m.b.H., Austria
SOURCE: Eur. Pat. Appl., 8 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1477201	A1	20041117	EP 2004-10598	20040504
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
DE 10321448	A1	20041202	DE 2003-10321448	20030513
US 20050039740	A1	20050224	US 2004-844574	20040513

PRIORITY APPLN. INFO.: DE 2003-10321448 A 20030513

AB The invention concerns a method and device for admixing at least one gas or gas mixture with a gas or gas mixture stream in a way that it results a predetd. gas concentration by regulating the pressure of the admixed gas via a pressure valve. The steps involved are: (a) measuring the flow and/or pressure of the gas(mixture); (b) measuring the flow and/or pressure of the gas(mixture) to be added; (c)to achieve a target value in the resulting gas stream, the flow and/or pressure of the gas(mixture) to be added is calculated and compared with the measured value; (d) based on the difference of the measured value and the target value the pressure valve that controls the added gas is regulated. The method and device operate gas streams of air, perfluorocarbons , oxygen, xenon, nitrogen monoxide, carbon monoxide, carbon dioxide, hydrogen, dinitrogen oxide, sulfur hexafluoride, nitrosoethanol, argon, helium, their mixts., anesthetic gases, breath-stimulating mixts., and other therapeutic gas mixts.

IT 7440-63-3, Xenon, biological studies 10024-97-2, Dinitrogen oxide, biological studies

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(method and device for controlled admixing of a gas or a mixt
. of gases with a stream of gas or gas mixture in medical use)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 7 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:159041 HCAPLUS Full-text
DOCUMENT NUMBER: 140:187423
TITLE: Gaseous drugs composed of oxygen in combination with xenon and/or nitrogen oxide for the improvement of oxygen utilization
INVENTOR(S): Neu, Peter; Reyle-Hahn, Matthias; Pilger, Carsten
PATENT ASSIGNEE(S): Messer Griesheim G.m.b.H., Germany
SOURCE: Ger. Offen., 4 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10336768	A1	20040226	DE 2003-10336768	20030808
PRIORITY APPLN. INFO.:			DE 2002-10236766	IA 20020810

AB The invention concerns the in-vivo and in-vitro treatment of organs and tissues with oxygen in combination with xenon and/or nitrogen oxide for the improvement of oxygen utilization in cells. The gas mixture can be applied in form of gas or as aerosol. Xenon is applied in anesthetic, subanasthetic , hypnotic, subhypnotic, seducing and subseducing quantities. Organ infractions, reperfusion can be avoided in the body or extracorporeal, e.g. during transplantation.
IT 7440-63-3, Xenon, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(gaseous drugs composed of oxygen in combination with xenon and/or nitrogen oxide for improvement of oxygen utilization)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

Xe

L43 ANSWER 8 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2003:32786 HCAPLUS Full-text
DOCUMENT NUMBER: 138:195728
TITLE: A Neutral Xenon-Containing Radical, HXeO
AUTHOR(S): Khriachtchev, Leonid; Pettersson, Mika; Lundell, Jan; Tanskanen, Hanna; Kiviniemi, Tiina; Runeberg, Nino; Raesaenen, Markku
CORPORATE SOURCE: Laboratory of Physical Chemistry, University of Helsinki, Helsinki, FIN-00014, Finland
SOURCE: Journal of the American Chemical Society (2003), 125(6), 1454-1455
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB We report an open-shell species containing xenon, HXeO (2Σ), prepared by UV photolysis of H2O/Xe or N2O/HBr/Xe solid mixts. at 7 K and subsequent thermal mobilization of oxygen atoms at ≥30 K. The H-Xe stretching absorption of HXeO in solid Xe is at 1466.1 cm-1, and it shifts to 1070.3 cm-1 upon deuteration. The extensive ab initio calcns. indicate that HXeO is intrinsically stable, owing to significant ionic and covalent contributions to its bonding. The formation of HXeO (2Σ) radicals in these expts. suggests extensive stabilization and thermal mobility of singlet (1D) oxygen atoms in solid Xe and holds promises for the stability of the HKrO and HArO species.

IT 7440-63-3D, Xenon, H2O/Xe mixts or N2O/HBr/Xe solid mixts.
RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(neutral xenon-containing radical HXeO prepared by UV photolysis of H2O/Xe or N2O/HBr/Xe solid mixts. and subsequent thermal mobilization of oxygen atoms)

RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

Xe

IT 10024-97-2, Nitrous oxide, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(neutral xenon-containing radical HXeO prepared by UV photolysis of H2O/Xe or N2O/HBr/Xe solid mixts. and subsequent thermal mobilization of oxygen atoms)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

O═N═N

IT 499212-64-5P, Xenon hydride oxide (XeHO)
499212-65-6P, Xenon hydride oxide (XeDO)
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(neutral xenon-containing radical HXeO prepared by UV photolysis of H2O/Xe or N2O/HBr/Xe solid mixts. and subsequent thermal mobilization of oxygen atoms)
RN 499212-64-5 HCAPLUS
CN Xenon hydride oxide (XeHO) (9CI) (CA INDEX NAME)

RN 499212-65-6 HCAPLUS
CN Xenon hydride oxide (XeDO) (9CI) (CA INDEX NAME)

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 9 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:107133 HCAPLUS Full-text
DOCUMENT NUMBER: 136:145232
TITLE: Use of carbon monoxide for treating inflammation of upper airways or bronchi
INVENTOR(S): Lemaire, Marc; Lecourt, Laurent
PATENT ASSIGNEE(S): L'Air Liquide Sante (International), Fr.
SOURCE: PCT Int. Appl., 18 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002009731	A1	20020207	WO 2001-FR2396	20010723
W: AU, CA, JP, US, ZA				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
FR 2812197	A1	20020201	FR 2000-9881	20000727
FR 2812197	B1	20030103		
EP 1307208	A1	20030507	EP 2001-956632	20010723
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				

PRIORITY APPLN. INFO.: FR 2000-9881 A 20000727
WO 2001-FR2396 W 20010723

AB The invention discloses the use of carbon monoxide (CO) or a CO donor combined with at least a gas selected among nitrogen monoxide, carbon dioxide, helium, oxygen or nitrogen, and at least an active product with anti-inflammatory activity to produce a medicine for treating or preventing an acute or chronic inflammation in a human. Furthermore, the medicine may contain an addnl. gas

selected among xenon, hydrogen, argon, neon, krypton, nitrogen oxide (N2O), carbon-containing or fluorocarbon hydrocarbons, and their mixts. The medicine is in the form of an inhalant aerosol. The inventive medicine is designed to treat any inflammatory pathol., vasoconstriction or bronchial constriction of the upper airways or of the bronchial tree, such as asthma, mucoviscidosis, pneumopathy and bronchial pneumopathy.

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 10 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:76697 HCAPLUS Full-text
DOCUMENT NUMBER: 136:124390
TITLE: Thermodynamics of Liquid (Xenon + Diborane)
AUTHOR(S): Martins, Luis F. G.; Filipe, Eduardo J. M.; Calado, Jorge C. G.
CORPORATE SOURCE: Centro de Quimica Estrutural, Instituto Superior Tecnico, Lisbon, 1049-001, Port.
SOURCE: Journal of Physical Chemistry B (2002), 106(7), 1741-1745
CODEN: JPCBFK; ISSN: 1089-5647
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The total vapor pressure of liquid mixts. of xenon and diborane has been measured at 161.40 K (the triple point of xenon) and at 182.34 K (the triple point of dinitrogen oxide), as a function of composition The liquid densities were also measured at 182.34 K. The mixts. show pos. deviations from Raoult's law. Both the excess molar Gibbs energy (GmE) and the excess molar volume (VmE) are pos. For the equimolar mixture GmE = 118.8 J.mol-1 at 161.40 K, GmE = 91.7 J.mol-1 at 182.34 K and VmE = 0.248 cm3.mol-1 at 182.34 K. The estimated value of the excess molar enthalpy (HmE) was found to be 328 J.mol-1. The results were interpreted by using the Deiters equation of state. This is the first thermodn. study of the xenon + diborane system.

IT 7440-63-3, Xenon, properties
RL: PRP (Properties)
(thermodn. of liquid xenon + diborane mixts.)

RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

Xe

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 11 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:752377 HCAPLUS Full-text
DOCUMENT NUMBER: 135:323254
TITLE: Liquid Mixtures Involving Cyclic Molecules. 2: Xenon + Cyclobutane
AUTHOR(S): Martins, Luis F. G.; Filipe, Eduardo J. M.; Calado, Jorge C. G.
CORPORATE SOURCE: Centro de Quimica Estrutural, Instituto Superior Tecnico, Lisbon, 1049-001, Port.
SOURCE: Journal of Physical Chemistry B (2001), 105(44), 10936-10941

CODEN: JPCBFK; ISSN: 1089-5647
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The total vapor pressure of liquid mixts. of xenon and cyclobutane has been measured at 182.34 K (the triple point of dinitrogen oxide) and at 195.49 K (the triple point of ammonia), as a function of composition The mixts. show small pos. deviations from Raoult's law at both temps. The liquid densities were also measured at 182.34 K. Both the excess molar Gibbs energy (GmE) and the excess molar volume (VmE) were calculated from the exptl. data. For the equimolar mixture GmE = 9.9 J mol-1 at 182.34 K, GmE = 24.0 J mol-1 at 195.49 K, and VmE = -1.077 cm3 mol-1 at 182.34 K. The excess molar enthalpy (HmE) was estimated from the temperature dependence of GmE and found to be -185 J mol-1. The results were interpreted by using the statistical association fluid theory and compared with those from the literature for the linear analog system (xenon + n-butane).
IT 7440-63-3, Xenon, properties
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(thermodn. of VLE in xenon-cyclobutane liquid mixture)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 12 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:908994 HCAPLUS Full-text
DOCUMENT NUMBER: 134:58685
TITLE: Method and apparatus for recovering xenon or a mixture of krypton and xenon from air
INVENTOR(S): Sweeny, William Paul; Fidkowski, Zbigniew Tadeusz
PATENT ASSIGNEE(S): Air Products and Chemicals, Inc., USA
SOURCE: U.S., 6 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6164089	A	20001226	US 1999-349895	19990708
EP 1067346	A1	20010110	EP 2000-305612	20000703
EP 1067346	B1	20050302		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
AT 290195	T	20050315	AT 2000-305612	20000703

PRIORITY APPLN. INFO.: US 1999-349895 A 19990708
AB Method and apparatus for recovering xenon or a mixture of xenon and krypton from air processed in a cryogenic air separation plant. An oxygen rich stream containing xenon and or krypton and xenon together with other trace impurities is subjected to a carbon dioxide and nitrous oxide removal step followed by

concentration of xenon and or a mixture of krypton and xenon in a liquid fraction separated from an oxygen enriched vapor and vaporizing and recovering a xenon and or krypton and xenon mixture enriched vapor.

IT 7440-63-3P, Xenon, preparation
RL: PEP (Physical, engineering or chemical process); PUR (Purification or recovery); PREP (Preparation); PROC (Process)
(method and apparatus for recovering xenon or a mixture of krypton and xenon from air)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

IT 10024-97-2, Nitrous oxide, processes
RL: POL (Pollutant); REM (Removal or disposal); OCCU (Occurrence); PROC (Process)
(method and apparatus for recovering xenon or a mixture of krypton and xenon from air)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 13 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:302478 HCAPLUS Full-text
DOCUMENT NUMBER: 132:317969
TITLE: A demonstration of the concentration and second gas effects in humans anesthetized with nitrous oxide and desflurane
AUTHOR(S): Taheri, Sharam; Eger, Edmond I., II
CORPORATE SOURCE: Department of Anesthesia, University of California, San Francisco, CA, 94143-0464, USA
SOURCE: Anesthesia & Analgesia (Baltimore) (1999), 89(3), 774-780
CODEN: AACRAT; ISSN: 0003-2999
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB In the present study, we explored both the existence of and the basis for the concentration and second gas effects. Groups of six normocapnic patients were given one of three gas mixts. via a nonrebreathing system: 65% nitrous oxide (N2O) plus 4% desflurane; 5% N2O plus 4% desflurane; or 65% N2O plus 0.5% desflurane plus 2% xenon (Xe). End-tidal carbon dioxide (CO2) was held constant by adjustments in ventilation. Confirming the existence of the concentration effect, the end-tidal (FA) concentration of N2O increased toward the inspired (FI) concentration more rapidly (i.e., FA/FI increased more rapidly) when the inspired concentration was 65% than when it was 5%. The FA/FI for desflurane also increased more rapidly when desflurane was given with 65% rather than 5% N2O, confirming the existence of the second gas

effect. The small uptake of the second gas (desflurane) did not influence its own FA/FI or that of N2O; i.e., the administration of 4%, rather than 0.5%, desflurane did not increase the rate of rise of FA/FI of either N2O or desflurane. One of the bases of the concentration and second gas effects, a concentrating of residual gases, was confirmed: administration of Xe with 65% N2O produced an FA/FI for Xe that exceeded 1.0. Patient sex did not seem to influence the rate of rise of FA/FI of either N2O or desflurane. Finally, we unexpectedly found that, despite an equal solubility in blood, the rise in FA/FI for N2O exceeded that for desflurane, perhaps because of differences in tissue solubilities and inter-tissue diffusion. Implications: As predicted by the concentration and second gas effects, increasing the inspired concentration of nitrous oxide accelerated its rate of rise and the rate of rise of concurrently administered desflurane in humans.

IT 7440-63-3, Xenon, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(demonstration of concentration and second gas effects in humans anesthetized
with nitrous oxide and desflurane)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

Xe

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 14 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1999:745957 HCAPLUS Full-text
DOCUMENT NUMBER: 132:216938
TITLE: Respiratory mechanics during xenon anesthesia in pigs: Comparison with nitrous oxide
AUTHOR(S): Calzia, Enrico; Stahl, Wolfgang; Handschuh, Thomas; Marx, Thomas; Froba, Gebhardt; Bader, Stefan; Georgieff, Michael; Radermacher, Peter
CORPORATE SOURCE: Department of Anesthesiology, University of Ulm, Ulm, Germany
SOURCE: Anesthesiology (1999), 91(5), 1378-1386
CODEN: ANESAV; ISSN: 0003-3022
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Background: Because of its high d. and viscosity, xenon (Xe) may influence respiratory mechanics when used as an inhaled anesthetic. Therefore the authors studied respiratory mechanics during xenon and nitrous oxide (N2O) anesthesia before and during methacholine-induced bronchoconstriction. Methods: Sixteen pentobarbital-anesthetized pigs initially were ventilated with 70% nitrogen-oxygen. Then they were randomly assigned to a test period of ventilation with either 70% xenon-oxygen or 70% N2O-oxygen (for each group). Nitrogen-oxygen ventilation was then resumed. Tidal volume and inspiratory flow rate were set equally throughout the study. During each condition the authors measured peak and mean airway pressure (Pmax and Pmean) and airway resistance (Raw) by the end-inspiratory occlusion technique. This sequence was then repeated during a methacholine infusion. Results: Both before and during methacholine airway resistance was significantly higher with

xenon-oxygen (4.0 and 10.9 cm H2O·s-1·L-1, mean) when compared to nitrogen-oxygen (2.6 and 5.8 cm H2O·s-1·L-1) and N2O-oxygen (2.9 and 7.0). Pmax and Pmean did not differ before bronchoconstriction, regardless of the inspired gas mixture During bronchoconstriction Pmax and Pmean both were significantly higher with xenon-oxygen (Pmax, 33.1 and Pmean, 11.9 cm H2O) when compared to N2O-oxygen (28.4 and 9.5 cm H2O) and nitrogen-oxygen (28.0 and 10.6 cm H2O). Conclusions: Airway pressure and resistance are increased during xenon anesthesia. This response is moderate and not likely to assume major importance for the general use of xenon in anesthesia.

IT 7440-63-3, Xenon, biological studies 10024-97-2, Nitrous oxide, biological studies
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(respiratory mechanics during xenon anesthesia in pigs in comparison with nitrous oxide)

RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 15 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1999:305674 HCAPLUS Full-text
DOCUMENT NUMBER: 131:49790
TITLE: Semi-empirical calculation of the transport properties of eight binary gas mixtures at low density by the inversion method
AUTHOR(S): Papari, Mohammad M.; Boushehri, Ali
CORPORATE SOURCE: Department of Chemistry, Shiraz University, Shiraz, 71454, Iran
SOURCE: High Temperatures - High Pressures (1999), 31(2), 187-196
CODEN: HTHPAK; ISSN: 0018-1544
PUBLISHER: Pion Ltd
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Viscosities, diffusion coeffs., and thermal diffusion factors for eight equimolar binary gas mixts., Kr + O2, Kr + CO2, Kr + N2O, Kr + SF6, Xe + O2, Xe + CO2, Xe + N2O, and Xe + SF6, were determined from the principle of corresponding states of viscosity by the inversion technique. The Lennard-Jones 12-6 potential was used as the initial model potential. As an example, the interaction potential of Xe + SF6 was compared with those obtained from thermal diffusion measurements. The interaction potentials from the inversion

procedure reproduce viscosities within 1%, diffusion coeffs. within 5%, and thermal diffusion factors within 25%.

IT 7440-63-3, Xenon, properties 10024-97-2, Nitrogen oxide (N2O), properties
RL: PRP (Properties)
(semiempirical calcn. of transport properties of eight binary gas mixts. at low d. by inversion method)

RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 16 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1999:196286 HCAPLUS Full-text
DOCUMENT NUMBER: 131:39558
TITLE: Continuous arterial PO2 and PCO2 measurements in swine during nitrous oxide and xenon elimination; prevention of diffusion hypoxia
AUTHOR(S): Calzia, Enrico; Stahl, Wolfgang; Handschuh, Thomas; Marx, Thomas; Froba, Gebhardt; Georgieff, Michael; Radermacher, Peter
CORPORATE SOURCE: Department of Anesthesiology, University of Ulm, Ulm, D-89075, Germany
SOURCE: Anesthesiology (1999), 90(3), 829-834
CODEN: ANESAV; ISSN: 0003-3022
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB During nitrous oxide (N2O) elimination, arterial oxygen tension (Pao2) decreases because of the phenomenon commonly called diffusive hypoxia. The authors questioned whether similar effects occur during xenon elimination. Nineteen anesthetized and paralyzed pigs were mech. ventilated randomly for 30 min using inspiratory gas mixts. of 30% oxygen and either 70% N2O or xenon. The inspiratory gas was replaced by a mixture of 70% nitrogen and 30% oxygen. PaO2 and carbon dioxide tensions were recorded continuously using an indwelling arterial sensor. The Pao2 decreased from 119 ± 10 mmHg to 102 ± 12 mmHg (mean ± SD) during N2O washout ($P < 0.01$) and from 116 ± 9 mmHg to 110 ± 8 mmHg during xenon elimination ($P < 0.01$), with a significant difference ($P < 0.01$) between baseline and min. Pao2 values (ΔPao2, 17 ± 6 mmHg during N2O washout and 6 ± 3 mmHg during xenon washout). The Paco2 value also decreased (from 39.3 ± 6.3 mmHg to 37.6 ± 5.8 mmHg) during N2O washout ($P < 0.01$) and during xenon elimination (from 35.4 ± 1.6 mmHg to 34.9 ± 1.6 mmHg; $P < 0.01$). The ΔPaco2 was 1.7 ± 0.9 mmHg in the N2O group and 0.5 ± 0.3 mmHg in the xenon

group (P < 0.01). Diffusive hypoxia is unlikely to occur during recovery from xenon anesthesia, probably because of the low blood solubility of this gas.

IT 7440-63-3, Xenon, biological studies 10024-97-2, Nitrogen oxide (N2O), biological studies
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(diffusion hypoxia during nitrous oxide and xenon elimination)

RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 17 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1999:130123 HCAPLUS Full-text
DOCUMENT NUMBER: 131:103
TITLE: Effects of xenon on the performance of various respiratory flowmeters
AUTHOR(S): Goto, Takahisa; Saito, Hayato; Nakata, Yoshinori; Uezono, Shoichi; Ichinose, Fumito; Uchiyama, Masanori; Morita, Shigeho
CORPORATE SOURCE: School of Medicine, Teikyo University Ichihara Hospital and Nihon University, Chiba, Japan
SOURCE: Anesthesiology (1999), 90(2), 555-563
CODEN: ANESAV; ISSN: 0003-3022
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Background: The anesthetic gas xenon has distinctly different phys. properties compared with air, nitrous oxide, or oxygen. This led the authors to predict that xenon would affect the performance of com. available flowmeters. Methods: Flow was generated by an anesthesia ventilator connected to a lung simulator via a semiclosed breathing circuit. With the system filled with air or with various concns. of xenon or nitrous oxide in a balance of oxygen, the tidal volume was measured with two rotating vanes, a Pitot tube, a variable-orifice flowmeter, and two constant-temperature hot-wire flowmeters. Results: Although xenon minimally affected both rotating vane flowmeters, it caused the Pitot tube and the variable-orifice flowmeters to overread in proportion to the square root of the d. of the gas mixture used (xenon is 4.6 times more dense than air). In contrast, the hot-wire anemometers underread with xenon; for example, their readings in the presence of 45% and 70% xenon were <10% of those displayed when air was used. Nitrous oxide minimally affected all the flowmeters except the variable-orifice device. The Pitot flowmeter was also affected, but only when its gas analyzer port was open to the ambient air so that it no longer corrected its readings for changes in gas composition In

these cases, nitrous oxide produced overreadings in the same manner as did xenon. Conclusion: Among the 4 types of flowmeters studied, only the rotating-vane type is sufficiently accurate for use during anesthesia with xenon.

IT 10024-97-2, Nitrous oxide, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(effects of xenon on performance of various respiratory flowmeters)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 18 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1999:71318 HCAPLUS Full-text
DOCUMENT NUMBER: 130:201455
TITLE: Liquid mixtures involving triangular molecules: (vapor + liquid) equilibria of (xenon + trimethylboron)
AUTHOR(S): Filipe, Eduardo J. M.; Deiters, Ulrich K.; Calado, Jorge C. G.
CORPORATE SOURCE: Centro de Quimica Estrutural, Instituto Superior Tecnico, Lisbon, 1096, Port.
SOURCE: Journal of Chemical Thermodynamics (1998), 30(12), 1543-1553
CODEN: JCTDAF; ISSN: 0021-9614
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The total vapor pressure of xXe + (1 - x)B(CH3)3 has been measured at T = 161.39 K and T = 182.33 K (the triple points of xenon and nitrous oxide, resp.). The excess molar Gibbs energy GmE has been calculated as a function of composition from the vapor pressure data. The molar volumes of the mixts. were also measured at T = 182.33 K, and the corresponding excess molar volumes VmE calculated The results were interpreted using the Deiters equation of state DEOS, and Monte Carlo simulation. (c) 1998 Academic Press.

IT 7440-63-3, Xenon, properties
RL: PRP (Properties)
(total vapor pressure and molar volumes of xenon -trimethylboron mixts. from 161.39 to 182.33 K)

RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 19 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1997:704807 HCAPLUS Full-text
DOCUMENT NUMBER: 128:8360
TITLE: Classical absorption and emission spectroscopy of barrier discharges in N2/NO and O2/NOx mixtures
AUTHOR(S): Vinogradov, I. P.; Wiesemann, K.
CORPORATE SOURCE: Experimentalphysik insbes. Gaselektronik, Ruhr-Universitat Bochum, Bochum, D-44780, Germany
SOURCE: Plasma Sources Science & Technology (1997), 6(3), 307-316
CODEN: PSTEEU; ISSN: 0963-0252
PUBLISHER: Institute of Physics Publishing
DOCUMENT TYPE: Journal
LANGUAGE: English

AB By using emission and classical absorption spectroscopy with a continuum light source the authors have studied dielec. barrier discharges in N2/NO and O2/NOx mixts. The concns. of NO, NO2, NO3, N2O5, and O3 were measured inside the discharge and in the exhaust. In the discharge space resolved absorption spectroscopy was performed. In discharges with high content of NO or NOx electron impact induced dissociation of NO and NO2 turned out to be important. In discharges in pure N emission from NO and O(1S) were found. This indicates a surface reaction of atomic N with chemisorbed O and desorption of atomic O. No indication for the presence of physisorbed NO was detected. A novel method for obtaining the electron distribution function from absolutely measured light intensities was applied and the results compared to solns. of the Boltzmann equation.

IT 7440-63-3, Xenon, properties
RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(classical absorption and emission spectroscopy of barrier discharges in nitrogen/nitric oxide and oxygen/nitrogen oxide mixts.)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

IT 14899-66-2P, Xenon monoxide
RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
(classical absorption and emission spectroscopy of barrier discharges in nitrogen/nitric oxide and oxygen/nitrogen oxide mixts.)
RN 14899-66-2 HCAPLUS
CN Xenon oxide (XeO) (6CI, 7CI, 9CI) (CA INDEX NAME)

REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 20 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1997:526699 HCAPLUS Full-text

DOCUMENT NUMBER: 127:196097
TITLE: Liquid Mixtures Involving Cyclic Molecules: Xenon + Cyclopropane
AUTHOR(S): Calado, Jorge C. G.; Filipe, Eduardo J. M.; Lopes, Jose N. C.; Lucio, Jorge M. R.; Martins, Joao F.; Martins, Luis F. G.
CORPORATE SOURCE: Centro de Quimica Estrutural, Instituto Superior Tecnico, Lisbon, 1096, Port.
SOURCE: Journal of Physical Chemistry B (1997), 101(36), 7135-7138
CODEN: JPCBFK; ISSN: 1089-5647
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The total vapor pressure of liquid mixts. of xenon and cyclopropane has been measured at 161.39 K (the triple-point of xenon) and at 182.33 K (the triple-point of dinitrogen oxide), as a function of composition At 182.33 K the liquid densities were also measured. The mixts. show pos. deviations from Raoult's law. Both the excess molar Gibbs energy (GmE) and the excess molar volume (VmE) were calculated from the exptl. data. For the equimolar mixture, GmE = 90.6 J mol-1 at 161.39 K, GmE = 124.1 J mol-1 at 182.33 K, and VmE = -0.758 cm3 mol-1 at 182.33 K. The excess molar enthalpy (HmE) could be estimated from the temperature dependence of GmE and found to be -168 J mol-1. The results were interpreted using the 1cLJ perturbation theory of Fisher, et al.

IT 7440-63-3, Xenon, properties
RL: PRP (Properties)
(liquid mixts. with cyclopropane; total vapor pressure, densities, and thermodn. quantities of liquid mixts. of xenon and cyclopropane at 161.39 K and 182.33 K)

RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

Xe

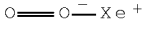
REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 21 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1995:730602 HCAPLUS Full-text
DOCUMENT NUMBER: 123:211759
ORIGINAL REFERENCE NO.: 123:37473a,37476a
TITLE: Absorption spectrum of a mixture of oxygen with nitrous oxide in a range from 215 to 260 nm
AUTHOR(S): Zelikina, G. Ya.; Bertsev, V. V.; Kiseleva, M. B.
CORPORATE SOURCE: Inst. Fiz., St. Petersburg Univ., Petergof, 198904, Russia
SOURCE: Optika i Spektroskopiya (1995), 78(5), 753-7
CODEN: OPSPAM; ISSN: 0030-4034
PUBLISHER: MAIK Nauka
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB The induced absorption spectra (215-260 nm) was studied for O2-N2O mixts. for 0.4-0.8 O2 mol. fractions. The coeffs. of induced absorption μ12 were obtained for O2-N2O mols. in the oxygen Herzberg III band. The μ12 value

decreases from 2.6 × 10-4 cm-1 amaga-2 at 215 nm in the continuum part of the spectra up to 6.6 × 10-6 cm-1 amaga-2 at 263 nm in the structural part of the spectra. Data from a preceding work is presented which allows the observation that the intensities of the induced absorption in the Herzberg III band for O2-X mols. where X = Ar, Kr, Xe, N2, and N2O linearly depends on cube of the ave. polarizability of the X partner.

IT 168026-52-6, Xenon superoxide (Xe(O2))
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)
(absorption spectrum of a mixture of oxygen with nitrous oxide in a range from 215 to 260 nm)
RN 168026-52-6 HCAPLUS
CN Xenon superoxide (Xe(O2)) (9CI) (CA INDEX NAME)



IT 7440-63-3, Xenon, properties 10024-97-2, Nitrogen oxide (N2O), properties
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(absorption spectrum of a mixture of oxygen with nitrous oxide in a range from 215 to 260 nm)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L43 ANSWER 22 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1995:627906 HCAPLUS Full-text
DOCUMENT NUMBER: 123:94515
ORIGINAL REFERENCE NO.: 123:16683a,16686a
TITLE: Liquid-liquid-vapor phase equilibrium behavior of binary xenon + 1-alkanol mixtures
AUTHOR(S): Gricus, Tiffany A.; Luks, Kraemer D.; Patton, Christi L.
CORPORATE SOURCE: Department of Chemical Engineering, The University of Tulsa, OK 74104-3189, Tulsa, OK, USA
SOURCE: Fluid Phase Equilibria (1995), 108(1-2), 219-29
CODEN: FPEQDT; ISSN: 0378-3812
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Liquid-liquid-vapor (llg) loci for the binary mixts. xenon + 1-hexanol and xenon + methanol are studied exptl. using a visual cell (stoichiometric)

technique. The pressure, temperature, phase compns. and molar volumes of the two liquid phases are reported for all the xenon + 1-alkanol mixts. from ethanol to 1-tetradecanol, which with methanol are all the members of this homologous series of binary mixts. that display llg behavior. The llg behavior of this homologous series of mixts. is compared to that of the homologous series of 1-alkanol mixts. with the solvent gases ethane, carbon dioxide, and nitrous oxide.

IT 7440-63-3, Xenon, properties
RL: PRP (Properties)
(systems; liquid-liquid-vapor phase equilibrium of binary xenon + alkanol mixts.)

RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

Xe

L43 ANSWER 23 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1995:33154 HCAPLUS Full-text
DOCUMENT NUMBER: 122:20221
ORIGINAL REFERENCE NO.: 122:3907a,3910a
TITLE: Photodeposition of oxynitride and nitride films using excimer lamps
AUTHOR(S): Bergonzo, P.; Boyd, I. W.
CORPORATE SOURCE: Electronic and Electrical Engineering Department, University College London, London, WC1E 7JE, UK
SOURCE: Microelectronic Engineering (1994), 25(2-4), 345-50
CODEN: MIENEF; ISSN: 0167-9317
DOCUMENT TYPE: Journal
LANGUAGE: English

AB We have exploited the excimer light generation principle to generate high photon fluxes over a narrow band of very short wavelengths. In particular, the 172nm radiation generated by a xenon excimer lamp system was used to irradiate gaseous mixts. of silane, nitrous oxide, and ammonia. After successfully photodepositing silicon dioxide and silicon nitride, we develop a technique for the direct photoenhanced deposition of silicon oxynitride thin films. The optimized deposition parameters are summarized and the properties of SiOxNy thin films are probed using FTIR spectrometry and ellipsometry techniques. Very good control of the stoichiometry is achievable with this photoenhanced process with virtually any composition between pure SiO2 and the Si3N4 being possible.

L43 ANSWER 24 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1994:614215 HCAPLUS Full-text
DOCUMENT NUMBER: 121:214215
ORIGINAL REFERENCE NO.: 121:38855a,38858a
TITLE: Multiphase equilibria of the binary mixture xenon + 1-decanol
AUTHOR(S): Patton, Christi L.; Luks, Kraemer D.
CORPORATE SOURCE: Department of Chemical Engineering, The University of Tulsa, Tulsa, OK, 74104-3189, USA
SOURCE: Fluid Phase Equilibria (1994), 98, 201-11
CODEN: FPEQDT; ISSN: 0378-3812
DOCUMENT TYPE: Journal

LANGUAGE: English
AB The authors' group has previously performed liquid-liquid-vapor (llg) studies of binary systems of several solvent gases (ethane, CO2, N2O) and the homologous series of 1-alkanols. As a result of these studies, the question has arisen as to what effect the mol. nature of the solvent gas has on the llg phase equilibrium behavior. To help answer this question, the llg and solid-liquid-vapor (slg) behavior of the binary mixture of the non-polar solvent gas xenon plus the solute 1-decanol are examined The compns. and molar volumes of the liquid phase along the llg and slg loci are detailed. In addition, liquid-vapor (lg) equilibrium data are reported for two isotherms. The properties along the multiphase loci of xenon + 1-decanol are compared with those for the binary mixts. ethane + 1-decanol, N2O + 1-decanol and CO2 + 1-decanol.
IT 7440-63-3, Xenon, properties
RL: PRP (Properties)
(solid-liquid-vapor and liquid-liquid-vapor equilibrium; multiphase equilibrium of
binary mixts. decanol-xenon/ethane/CO2/N2O)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

IT 10024-97-2, Nitrogen oxide (N2O), properties
RL: PRP (Properties)
(solid-liquid-vapor equilibrium; multiphase equilibrium of binary mixts. decanol-xenon/ethane/CO2/N2O)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L43 ANSWER 25 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1994:334703 HCAPLUS Full-text
DOCUMENT NUMBER: 120:334703
ORIGINAL REFERENCE NO.: 120:58641a,58644a
TITLE: Silicon oxide thin films grown by Xe2 excimer lamp chemical vapor deposition: the role of the substrate temperature and the window-substrate distance
AUTHOR(S): Gonzalez, P.; Garcia, E.; Pou, J.; Fernandez, D.; Serra, J.; Leon, B.; Perez-Amor, M.
CORPORATE SOURCE: Departimento Fisica Aplicada, University of Vigo, Lagoas-Marcosende 9, Vigo, 36200, Spain
SOURCE: Thin Solid Films (1994), 241(1-2), 348-51
CODEN: THSFAP; ISSN: 0040-6090
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A promising new technique in photochem. vapor deposition is the introduction of excimer lamps as vacuum-UV photon sources. Here the authors report the application of excimer lamp chemical vapor deposition for silicon oxide thin

film deposition. The high energy photons (λ = 172nm) from an Xe2 excimer lamp irradiate a gas mixture of Ar diluted with N2O and SiH4. The dependence of growth rate and film properties on the substrate temperature and the window-to-substrate distance is reported. The authors' results demonstrate that this method is appropriate for deposition of dense and adherent films at substrate temps. as low as 100° independently of the window-substrate distance. These results promise well for technol. applications due to the possibility of depositing onto large areas even on temperature-sensitive materials and of coating surfaces of irregular forms.

IT 10024-97-2, Nitrous oxide, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(photochem. vapor deposition of silicon dioxide films from mixt. containing, using xenon excimer lamp)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L43 ANSWER 26 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1994:311131 HCAPLUS Full-text
DOCUMENT NUMBER: 120:311131
ORIGINAL REFERENCE NO.: 120:54489a,54492a
TITLE: Photo-CVD (photochem. vapor deposition) of dielectric materials by pseudo-continuous excimer sources
AUTHOR(S): Bergonzo, P.; Kogelschatz, U.; Boyd, I. W.
CORPORATE SOURCE: Univ. Coll. London, WC1E 7JE, UK
SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (1994), 2045(Laser-Assisted Fabrication of Thin Films and Microstructures), 174-81
CODEN: PSISDG; ISSN: 0277-786X
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The authors report the use of vacuum-UV (VUV) light generated from a new type of excimer lamp to initiate the deposition of dielec. thin films in a photochem. vapor deposition process. Compared with other lamps, these pseudo-continuous light sources can provide high photon fluxes (more than a few watts) over large areas. The photodeposited film properties were determined using the usual techniques of ellipsometry, FTIR spectroscopy, and elec. measurements. Good film quality was obtained making this technique highly attractive. A layered combination of silicon oxide, silicon nitride, and silicon oxynitride can be produced in the same reactor at temps. below 300°. The technique also offers very good control of the stoichiometry in the case of silicon oxynitride film deposition, and therefore provides interesting perspectives for optical applications.

IT 10024-97-2, Nitrous oxide, uses
RL: USES (Uses)
(photochem. vapor deposition of silicon dioxide from mixture containing, by vacuum UV light from xenon excimer lamp)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L43 ANSWER 27 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1993:244380 HCAPLUS Full-text
DOCUMENT NUMBER: 118:244380
ORIGINAL REFERENCE NO.: 118:42165a,42168a
TITLE: Direct photodeposition of silicon dioxide films using a xenon excimer lamp
AUTHOR(S): Bergonzo, P.; Kogelschatz, U.; Boyd, I. W.
CORPORATE SOURCE: Electronic and Electrical Engineering, University College London, Torrington Place, London, WC1E 7JE, UK
SOURCE: Applied Surface Science (1993), 69(1-4), 393-7
CODEN: ASUSEE; ISSN: 0169-4332
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Excimer lamps opened up the field of intense vacuum UV (VUV) light generation. With theor. efficiencies reaching 40%, the power available from such lamps based on dielec. barrier discharge generation can be superior to those of typical low pressure Hg lamps with shorter UV wavelengths generated. The use of these lamps is presented for the direct photodeposition of SiO2 from silane and nitrous oxide mixts. Deposition rates are comparable with those obtained with low pressure Hg lamps. The results indicate promising further applications of such lamps towards semiconductor and optoelectronic materials processing.
IT 10024-97-2, Nitrous oxide, uses
RL: USES (Uses)
(photodeposition of silicon dioxide films from gas mixture containing, using xenon excimer lamp)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L43 ANSWER 28 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1993:132627 HCAPLUS Full-text
DOCUMENT NUMBER: 118:132627
ORIGINAL REFERENCE NO.: 118:22777a,22780a
TITLE: The temperature and concentration dependences of diffusion coefficients of the systems neon-oxygen, krypton-oxygen, xenon-oxygen and helium-nitrous oxide
AUTHOR(S): Dunlop, Peter J.; Bignell, C. M.
CORPORATE SOURCE: Dep. Phys. Inorg. Chem., Univ. Adelaide, Adelaide, 5000, Australia
SOURCE: Berichte der Bunsen-Gesellschaft (1992), 96(12), 1847-8
CODEN: BBPCAX; ISSN: 0005-9021
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Diffusion coeffs. were measured for the systems Ne-O2, Kr-O2, Xe-O2 and He-NO at 10 K intervals from 280 to 320 K. The results differ by as much as 6% from literature values.
IT 10024-97-2, Nitrous oxide, properties
RL: PRP (Properties)

(diffusion in mixture of helium with)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

IT 7440-63-3, Xenon, properties
RL: PRP (Properties)
(diffusion in oxygen mixture with)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

L43 ANSWER 29 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1992:560608 HCAPLUS Full-text
DOCUMENT NUMBER: 117:160608
ORIGINAL REFERENCE NO.: 117:27585a,27588a
TITLE: Pulse radiolysis studies of the quenching processes of excited xenon atoms
AUTHOR(S): Jowko, A.; Bartkiewicz, E.; Forys, M.
CORPORATE SOURCE: Dep. Chem., Agric. Teach. Univ., Siedlce, 08-110, Pol.
SOURCE: Journal of Radioanalytical and Nuclear Chemistry (1992), 159(2), 249-57
CODEN: JRNCDM; ISSN: 0236-5731
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The time resolved fluorescence of Xe2* excimers in pure Xe and Xe-M (M = H2, N2, N2O, CO2) mixts. was observed The formation rate constant of Xe2, k2 = (1.1 ± 0.1) × 10-30 cm6/s and the lifetime of the excimer precursors, τ0 = (100 ± 40) ns were evaluated. The quenching rate coeffs. of Xe(6p) states by M were in the range of (0.5-1.3) × 10-9 cm3/s. The basic parameters and operating characteristics of the newly constructed pulse radiolysis set-up based on SINUS-5 electron accelerator are also presented.
IT 12185-19-2, Xenon dimer, properties
RL: PRP (Properties)
(fluorescence of, in pure xenon and xenon-mixts., pulse radiolysis study of)
RN 12185-19-2 HCAPLUS
CN Xenon, mol. (Xe2) (8CI, 9CI) (CA INDEX NAME)

IT 10024-97-2, Nitrogen oxide (N2O),
reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(radiolysis of xenon mixts. containing, fluorescence of

xenon excimers and quenching processes of excited xenon atoms produced in)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L43 ANSWER 30 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1989:604859 HCAPLUS Full-text
DOCUMENT NUMBER: 111:204859
ORIGINAL REFERENCE NO.: 111:33861a,33864a
TITLE: Pulsed nitrous oxide discharge laser with the emission energy of 100 J
AUTHOR(S): Zhivukhin, I. N.; Ionin, A. A.; Kel'ner, M. S.; Sinitsyn, D. V.; Suchkov, A. F.; Frolov, K. K.
CORPORATE SOURCE: Fiz. Inst. im. Lebedeva, Moscow, USSR
SOURCE: Kvantovaya Elektronika (Moscow) (1989), 16(8), 1609-11
CODEN: KVEKA3; ISSN: 0368-7147
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB The effect was studied exptl. of mol. (N2, CO) and atomic (He, Ar, Xe) gases on the energy characteristics of a pulsed N2O electroionization laser. The laser mixture composition was optimized. In the unit with the optical volume V .apprx. 10 L at a gas pressure of 0.25 atm, an emission energy of .apprx.80 J (the specific output energy being .apprx.30 J/L-atm) was obtained at an active medium temperature T = 20° and 106 J, 36 J/L-Amagat at T = -30° and N = 0.2 Amagat. An efficiency of 10% was achieved.
IT 10024-97-2, Nitrous oxide, uses and miscellaneous
RL: DEV (Device component use); USES (Uses)
(lasers, gas composition effects on output of pulsed)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

IT 7440-63-3, Xenon, uses and miscellaneous
RL: USES (Uses)
(nitrous oxide laser gas mixture containing)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

L43 ANSWER 31 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1989:543564 HCAPLUS Full-text
DOCUMENT NUMBER: 111:143564

ORIGINAL REFERENCE NO.: 111:23821a,23824a
TITLE: Electron-beam pumped liquid excimer lasers
AUTHOR(S): Loree, Thomas R.; Showalter, Robert R.; Johnson, Tamara; Birmingham, Brian S.; Hughes, William M.
CORPORATE SOURCE: Los Alamos Natl. Lab., Los Alamos, NM, 87545, USA
SOURCE: Proceedings of the International Conference on Lasers (1989), Volume Date 1988 253-60
CODEN: PICLDV; ISSN: 0190-4132
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The excimers were investigated that are formed in liquid Ar when various cryogenic gas mixes are excite by 1-MeV electrons. Fluorescence was detected from any excimers at their new red shifted wavelengths, and XeO, Se2, and Kr2 were lased.
IT 10024-97-2, Nitrogen oxide (N2O), properties
RL: PRP (Properties)
(fluorescence of argon monoxide in electron-beam-pumped argon mixture with)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

IT 55130-03-5P, Xenon chloride (XeCl)
RL: PREP (Preparation)
(formation and emission of, in electron-beam-pumped argon mixt. with xenon and nitrogen fluoride)
RN 55130-03-5 HCAPLUS
CN Xenon chloride (XeCl) (9CI) (CA INDEX NAME)

IT 14899-66-2P, Xenon oxide (XeO)
RL: PREP (Preparation)
(formation and laser emission of, in electron-beam-pumped xenon containing nitrous oxide)
RN 14899-66-2 HCAPLUS
CN Xenon oxide (XeO) (6CI, 7CI, 9CI) (CA INDEX NAME)

L43 ANSWER 32 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1988:520914 HCAPLUS Full-text
DOCUMENT NUMBER: 109:120914
ORIGINAL REFERENCE NO.: 109:19969a,19972a
TITLE: Parameters of a semi-self-maintained photoionization discharge in mixtures of carbon monoxide:nitrogen:X

(X = nitric oxide, ammonia, ethylene, xenon)
AUTHOR(S): Abrosimov, G. V.; Vysikailo, F. I.; Gurashvili, V. A.; Pis'mennyi, V. D.; Pulinets, T. S.; Saenko, V. B.; Skvortsova, A. A.
CORPORATE SOURCE: Nauchno-Issled. Inst. Yad. Fiz., Moscow, USSR
SOURCE: Fizika Plazmy (Moscow, Russian Federation) (1988), 14(6), 727-9
CODEN: FIPLDK; ISSN: 0134-5052
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB The investigations of the photoionization semi-self-maintained discharge were carried out for mixts. containing CO with NO, NH3, C2H4 or Xe). The obtained parameters were compared with parameters for the semi-self-maintained discharge. The good agreement between elec. and energetic parameters was observed
IT 7440-63-3, Xenon, properties
RL: PRP (Properties)
(parameters of photoionization semi-self-maintained discharge in mixture containing carbon monoxide and)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

Xe

L43 ANSWER 33 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1987:110164 HCAPLUS Full-text
DOCUMENT NUMBER: 106:110164
ORIGINAL REFERENCE NO.: 106:17891a,17894a
TITLE: Wave-front reversal under temperature-induced scattering in a gas
AUTHOR(S): Berezinskaya, A. M.; Dukhovnyi, A. M.; Stasel'ko, D. I.
CORPORATE SOURCE: USSR
SOURCE: Optika i Spektroskopiya (1986), 61(5), 1085-9
CODEN: OPSPAM; ISSN: 0030-4034
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB The reflection coeffs. and parameters of wavefront reversal were determined for spatially inhomogeneous beams and for beams with diffraction divergence in absorbing gases. The nonsteady-state temperature-induced scattering (TIS) was excited by focused radiation of a Nd laser in a 5 cm long cuvette filled with a gaseous NOx + Xe mixture having an absorption coefficient of 0.18 cm-1. The threshold pumping energy (Wt) for diffraction-diverging beams was .apprx.8 × 10-4 J, i.e. a factor of .apprx.10 lower than the threshold energy for the excitation of TIS in liqs. The reflection coefficient of the diffraction beam was >0.6 at W/Wt .apprx.103 and 0.9 at W/Wt 3-100 (W = actual pumping energy) at high wavefront reversal (0.8-0.9). High reflection coeffs. and wavefront reversal parameters were attained for spatially inhomogeneous beams although in a narrower range of W. The factors limiting the reflection coeffs. and wavefront reversals in TIS of high intensity light beams were analyzed.
IT 7440-63-3, Xenon, properties
RL: PRP (Properties)
(wavefront reversal under temperature induced scattering in nitrogen oxide mixture with)

RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

L43 ANSWER 34 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1986:505370 HCAPLUS Full-text
DOCUMENT NUMBER: 105:105370
ORIGINAL REFERENCE NO.: 105:16925a,16928a
TITLE: Lasing xenon monoxide in liquid argon
AUTHOR(S): Loree, Thomas R.; Showalter, Robert R.; Johnson, Tamara M.; Birmingham, Brian S.; Hughes, William M.
CORPORATE SOURCE: Los Alamos Natl. Lab., Los Alamos, NM, 87545, USA
SOURCE: Optics Letters (1986), 11(8), 510-12
CODEN: OPLEDP; ISSN: 0146-9592
DOCUMENT TYPE: Journal
LANGUAGE: English
AB XeO lased at 547 nm with Xe and N2O concns. of tens of parts in 106 in liquid Ar. The solution was pumped with a short-pulse 1-MeV electron beam. The resulting gain was at least 23% per cm.
IT 7440-63-3, uses and miscellaneous 10024-97-2, properties
RL: USES (Uses)
(xenon oxide laser mixture containing, in liquid argon)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L43 ANSWER 35 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1986:100686 HCAPLUS Full-text
DOCUMENT NUMBER: 104:100686
ORIGINAL REFERENCE NO.: 104:15761a,15764a
TITLE: Deposition of layers from the gas phase
INVENTOR(S): Kahlert, Volker; Adam, Peter
PATENT ASSIGNEE(S): VEB Zentrum fuer Forschung und Technologie Mikroelektronik, Ger. Dem. Rep.
SOURCE: Ger. (East), 7 pp.
CODEN: GEXXA8
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DD 227003	A1	19850904	DD 1984-265845	19840801

PRIORITY APPLN. INFO.: DD 1984-265845 19840801

AB Layers are deposited from the gas phase onto semiconductor substrates at low temperature (50-300°) and pressure (0.1-10 torr) and at high rates by introducing a reaction gas containing Xe into a reaction chamber containing the substrate and illuminating the substrate with light from a high-pressure Xe lamp. Thus, a Si substrate was placed in a reaction chamber, and a gas mixture containing approx. equal amts. of N2O and Xe and a N2O/SiH4 ratio of .apprx.10 was passed through at 2 torr. The whole substrate surface was exposed to the light of a high-pressure Xe lamp at constant energy d. The substrate was heated uniformly to 200°. When the desired thickness of SiO2 was reached, the gas flow was stopped and the coated substrate was subjected to further steps in device manufacture

IT 7440-63-3, uses and miscellaneous 10024-97-2, uses and miscellaneous
RL: USES (Uses)
(silica film deposition on silicon from gas mixts. containing, photolysis in)

RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L43 ANSWER 36 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER:	1985:569779 HCAPLUS Full-text
DOCUMENT NUMBER:	103:169779
ORIGINAL REFERENCE NO.:	103:27107a,27110a
TITLE:	Effective recording of thermal dynamic holograms in gases
AUTHOR(S):	Berezinskaya, A. M.; Dukhovnyi, A. M.; Stasel'ko, D. I.
CORPORATE SOURCE:	USSR
SOURCE:	Pis'ma v Zhurnal Tekhnicheskoi Fiziki (1985), 11(15), 905-9 CODEN: PZTFDD; ISSN: 0320-0116
DOCUMENT TYPE:	Journal
LANGUAGE:	Russian

AB Dynamic holograms recorded in NO2-N2O4-NO gas mixts. (pressure 10 atm, transparency .simeq. 85%) using Nd laser with pulse duration 3 × 10-4 s (Θ = 1°) show a possibility to reach an efficiency of ≥20% of light beam conversion.

IT 7440-63-3, uses and miscellaneous

RL: USES (Uses)
(recording of thermal dynamic holograms in nitrogen oxide gas mixture containing)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

L43 ANSWER 37 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1982:501566 HCAPLUS Full-text
DOCUMENT NUMBER: 97:101566
ORIGINAL REFERENCE NO.: 97:16759a,16762a
TITLE: Mobilities of ions in irradiated carbon dioxide, nitrogen oxide (N2O), sulfur hexafluoride, and mixtures of sulfur hexafluoride with xenon and argon
AUTHOR(S): Jowko, Antoni; Armstrong, David A.
CORPORATE SOURCE: Dep. Chem., Univ. Calgary, Calgary, AB, T2N 1N4, Can.
SOURCE: Radiation Physics and Chemistry (1982), 19(6), 449-53
CODEN: RPCHDM; ISSN: 0146-5724
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Pos. and neg. ions formed by a constant flux of x-rays in the gases at densities of (0.8-40) × 1018 mol/cm3, were pulsed into a drift tube, and their mobilities at 297 K were determined Least-mean-squares anal. of the dependence on gas d. gave the following pos. and neg. ion mobilities normalized to 2.69 × 1019 mol/cm3 in the parent gases: CO2: μ0+ = μ0- = 1.04, N2O: μ0+ = 0.75, μ0- = 1.03; SF6: μ0+(1) = 0.53, μ0+(2) = 0.37, μ0- = 0.48; and for SF6 ions in Ar: μ0+(1) = 2.36, μ0+(2) = 1.33, μ0- = 2.40 and in Xe: μ0+(2) = 0.61, μ0- = 0.93. All values are in units of cm2/V-s. Only in the case of SF6 was >1 ion of a given charge observed The results are compared with earlier work, and the nature of the ions is discussed.
IT 7440-63-3, properties
RL: PRP (Properties)
(mobility of ions in x-ray irradiated sulfur hexafluoride mixts . with)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

L43 ANSWER 38 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1982:94570 HCAPLUS Full-text
DOCUMENT NUMBER: 96:94570
ORIGINAL REFERENCE NO.: 96:15371a,15374a
TITLE: On ultimate characteristics of a photochemical xenon oxide (XeO) laser
AUTHOR(S): Zuev, V. S.; Mikheev, L. D.; Pogorel'skii, I. V.
CORPORATE SOURCE: Fiz. Inst. im. Lebedeva, Moscow, USSR
SOURCE: Kvantovaya Elektronika (Moscow) (1980), 7(7), 1482-91

CODEN: KVEKA3; ISSN: 0368-7147
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB Exptl. and theor. studies have been made into a nature of internal losses in the active medium of a photochem. XeO laser pumped by an open high-current elec. discharge. Possible improvement is shown of the specific efficiency of the XeO laser as a result of reduction of the internal losses. Pump calcns. were made and the excited energy of the stimulated emission from the XeO laser with a flat resonator was determined Optimal mixture composition and mirror transmittance have been found at which the lasing energy of a pulse whose duration is .apprx.10 μs should be .apprx.40 J which corresponds to an overall laser efficiency of .apprx.0.1%. Further improvement of the given laser efficiency up to 0.2% is possible with the use of an isotopically pure Xe.
IT 7440-63-3, uses and miscellaneous 10024-97-2, properties
RL: USES (Uses)
(xenon oxide photochem. laser gas mixture containing)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L43 ANSWER 39 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1980:646559 HCAPLUS Full-text
DOCUMENT NUMBER: 93:246559
ORIGINAL REFERENCE NO.: 93:39411a,39414a
TITLE: Thermodynamics of liquid mixtures of nitrous oxide and xenon
AUTHOR(S): Machado, Jose R. S.; Gubbins, Keith E.; Lobo, Lelio Q.; Staveley, Lionel A. K.
CORPORATE SOURCE: Sch. Chem. Eng., Cornell Univ., Ithaca, NY, 14853, USA
SOURCE: Journal of the Chemical Society, Faraday Transactions 1: Physical Chemistry in Condensed Phases (1980), 76(12), 2496-506
CODEN: JCFTAR; ISSN: 0300-9599
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The total pressure and excess volume at 182.32 K and the excess enthalpy at 184.05 K of N2O-Xe liquid mixts. were determined as functions of composition Vapor pressure results were used to estimate the excess Gibbs energy. A pos. azeotrope exists at a N2O mole fraction of ≈0.08. The results agree with values calculated from perturbation theory for nonspherical mols. by using an intermol. potential that includes dipolar and quadrupolar electrostatic terms. The agreement with theory is improved by taking into account the accentric nature of the intermol. forces.
IT 7440-63-3, properties
RL: PRP (Properties)

(thermodn. of mixing of, with nitrous oxide)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

IT 10024-97-2, properties
RL: PRP (Properties)
(thermodn. of mixing of, with xenon)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L43 ANSWER 40 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1980:562191 HCAPLUS Full-text
DOCUMENT NUMBER: 93:162191
ORIGINAL REFERENCE NO.: 93:25756h,25757a
TITLE: Modifications of brain glucose metabolism under hyperbaric conditions according to the narcotic potency of the breathing gas mixture (helium, nitrogen, xenon, nitrous oxide)
AUTHOR(S): Obrenovitch, T.; Brue, F.
CORPORATE SOURCE: Cent. Etud. Rech. Biophysiol. Appl. Mar., Toulon Naval, 83800, Fr.
SOURCE: Medecine Aeronautique et Spatiale, Medecine Subaquatique et Hyperbare (1980), 19(73), 70-6
CODEN: MSMHD4; ISSN: 0399-6417
DOCUMENT TYPE: Journal
LANGUAGE: French
AB Normoxic hyperbaric exposures induced in mice brain an increase in the glucose [50-99-7] and glycogen [9005-79-2] associated with a decrease in lactate [50-21-5]. These modifications appeared rapidly in mice exhibiting neither N narcosis nor high-pressure nervous syndrome. The decrease in brain lactate in mice exposed to narcotic pressure of N (11 atm) was less important than the decrease of brain lactate observed in other compressed animals (21 atm He-O mixture). Mice were also submitted at 1 atm to a normoxic mixture of Xe-O or N2O-O to compare the modifications induced by a narcotic breathing mixture, without an increase of pressure. Results obtained with Xe and N2O indicated that the difference is due to the narcotic potency of N at such pressure.
IT 7440-63-3, biological studies 10024-97-2, biological studies
RL: BIOL (Biological study)
(narcotic breathing mixture containing, modifications of brain glucose metabolism under hyperbaric conditions in relation to)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L43 ANSWER 41 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1980:31514 HCAPLUS Full-text
DOCUMENT NUMBER: 92:31514
ORIGINAL REFERENCE NO.: 92:5137a,5140a
TITLE: Relaxation of auroral transition of oxygen atom
AUTHOR(S): Fujiwara, Etsuo; Yamawaki, Hisashi; Kato, Yoshiaki; Yamanaka, Chiyoe
CORPORATE SOURCE: Fac. Eng., Osaka Univ., Osaka, Japan
SOURCE: Technology Reports of the Osaka University (1979), 29(1492-1516), 365-72
CODEN: TROUAI; ISSN: 0030-6177
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The production and deactivation processes are reported of the electronically excited 1S0 state of the O atom, in a gaseous mixture of Xe and N2O irradiated by 248.4 nm light from a KrF laser. The KrF laser excites Xe atoms via the 2-photon absorption process. Subsequent energy transfer from Xe* to N2O leads to the production of O(1S0) excited state is deactivated mainly by collisions with N2O mols. The exptl. determined deactivation gives an upper limit of allowable d. of N2O mols. to be 5 torr, corresponding to the maximum stored energy d. of 60J/L, when N2O is used as a laser medium.
IT 7440-63-3, properties
RL: PRP (Properties)
(relaxation of auroral transition of oxygen atom in nitrous oxide mixture with)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

IT 10024-97-2, properties
RL: PRP (Properties)
(relaxation of auroral transition of oxygen atom in xenon mix. with)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L43 ANSWER 42 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1978:520509 HCAPLUS Full-text
DOCUMENT NUMBER: 89:120509
ORIGINAL REFERENCE NO.: 89:18515a,18518a
TITLE: Study of a photochemical laser using the xenon oxide (XeO) molecule
AUTHOR(S): Datskevich, I. S.; Zuev, V. S.; Mikheev, L. D.; Pogorel'skii, I. V.
CORPORATE SOURCE: Fiz. Inst. im. Lebedeva, Moscow, USSR
SOURCE: Kvantovaya Elektronika (Moscow) (1978), 5(7), 1456-64
CODEN: KVEKA3; ISSN: 0368-7147
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB The performance characteristics of a photochem. laser utilizing the XeO mol. (the emission wavelength is 0.54 μm) operating at 160 K were studied. Observed dependences are discussed of the emission energy on the pressure of N2O-Xe-Ar active mixture components. A relation of the components was found which provides for the specific energy d. of .apprx.8 mJ/cm3 the total emission energy being 0.6 J.

IT 7440-63-3, properties 10024-97-2, properties
RL: PRP (Properties)
(xenon oxide photochem. active mixture containing)

RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L43 ANSWER 43 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1978:433854 HCAPLUS Full-text
DOCUMENT NUMBER: 89:33854
ORIGINAL REFERENCE NO.: 89:5117a,5120a
TITLE: Nonlinear processes in the infrared and ultraviolet
AUTHOR(S): Rhodes, C. K.
CORPORATE SOURCE: Mol. Phys. Cent., SRI Int., Menlo Park, CA, USA
SOURCE: Springer Series in Optical Sciences (1978), 9(High-Power Lasers Appl.), 163-75
CODEN: SSOSDB; ISSN: 0342-4111
DOCUMENT TYPE: Journal
LANGUAGE: English

AB After reviewing nonlinear processes in the IR region, an anal. is made of the observation of 2-quantum processes in the UV region. Estimated 2-photon laser absorption cross sections are presented for various atomic and mol. systems. The range in susceptibility spans several orders of magnitude and the ests. involve several diverse types of transitions including bound-bound processes in both atoms (Kr) and mols. (H2) and bound-free transitions (Xe ionization, N2O dissociation). Some preliminary results are reported on the laser-excited

green emission observed from Xe-N2O mixts. and they establish that 2-photon absorption was involved in the formation of the radiating species.

L43 ANSWER 44 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1978:200579 HCAPLUS Full-text
DOCUMENT NUMBER: 88:200579
ORIGINAL REFERENCE NO.: 88:31383a,31386a
TITLE: Variation of chemical shielding with intermolecular interactions and rovibrational motion. II. Nitrogen-15 and carbon-13 nuclei in nitrous oxide and carbon dioxide
AUTHOR(S): Jameson, Cynthia J.; Jameson, A. Keith; Parker, Harriet; Cohen, Sheila M.; Lee, Chun-Luan
CORPORATE SOURCE: Dep. Chem., Univ. Illinois, Chicago, IL, USA
SOURCE: Journal of Chemical Physics (1978), 68(6), 2861-7
CODEN: JCPSA6; ISSN: 0021-9606
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In the gas phase, the chemical shielding of a nucleus in terms of temperature and d. can be written in a virial expansion, $\sigma(T,\rho) = \sigma0(T) + \sigma1(T)\rho + \sigma2(T)\rho2 + \ldots$. $\sigma0(T)$ and $\sigma1(T)$ functions were determined for 13C in CO2 and both 15N nuclei in NNO. As expected, the terminal 15N has the largest chemical shift. The results are compared with data for other systems such as 1H, 19F, 31P, and 129Xe.
IT 7440-63-3, properties
RL: PRP (Properties)
(chemical shielding of nitrogen-15 in nitrous oxide mixts. containing)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

Xe

L43 ANSWER 45 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1976:175527 HCAPLUS Full-text
DOCUMENT NUMBER: 84:175527
ORIGINAL REFERENCE NO.: 84:28467a,28470a
TITLE: The compression-ordering and solubility-disordering effects of high pressure gases on phospholipid bilayers
AUTHOR(S): Chin, Jane H.; Trudell, James R.; Cohen, Ellis N.
CORPORATE SOURCE: Sch. Med., Stanford Univ., Stanford, CA, USA
SOURCE: Life Sciences (1976), 18(5), 489-97
CODEN: LIFSAK; ISSN: 0024-3205
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The effects of 51 and 102 atm of helium, hydrogen, nitrogen, argon, xenon and nitrous oxide on the mol. motion of nitroxide spin-labeled phospholipid-cholesterol bilayers were measured by EPR techniques. Immediately, application of high pressures of all gases decreased the mol. motion of the fatty acid chains of the membrane phospholipids; the magnitude of ordering was linearly related to the amount of pressure applied. The 2nd effect was an increase in mol. motion of the fatty acid chains which appeared more slowly due to the

slow gas diffusion through the column of lipid dispersion. The magnitude of disorder of the phospholipid membrane at equilibrium correlated with the known lipid solubilities of the gases in olive oil as well as with the anesthetic potency of all the gases except xenon. The environment of the spin label became less polar as the gases diffused into the bilayer. The present studies in the phospholipid model membrane show that the net effects of high pressure gases in the lipid phase consist of an initial ordering of the membrane by compression opposed by the ability of the gas mols. to diffuse and dissolve in the lipid bilayers and disorder them. It thus appears that the resultant perturbations of the membrane lipid fluidity by high pressure gases may subsequently be transmitted to membrane-bound protein to result in changes that may be associated, in part, with the diverse effects of anesthesia and of the high pressure nervous syndrome (HPNS) observed in deep-sea divers. The model system may be useful in developing gas mixts. which minimize HPNS.

L43 ANSWER 46 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1976:131929 HCAPLUS Full-text
DOCUMENT NUMBER: 84:131929
ORIGINAL REFERENCE NO.: 84:21429a,21432a
TITLE: Effect of xenon, nitrous oxide and halothane on membrane-bound sialidase from calf brain
AUTHOR(S): Sandhoff, K.; Schraven, J.; Nowoczek, G.
CORPORATE SOURCE: Neurochem. Abt., Max-Planck-Inst. Psychiatr., Munich, Fed. Rep. Ger.
SOURCE: FEBS Letters (1976), 62(3), 284-7
CODEN: FEBLAL; ISSN: 0014-5793
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Xe, N2O, Triton X-100, and halothane stimulated sialidase activity of brain microsomal membranes. Triton X-100 and halothane stimulated sialidase activity at lower concns. but inhibited activity at higher concns. Both Xe and N2O increased sialidase .apprx.5-fold at 30 atm when endogenous substrate was used. With an exogenous substrate, sialidase activity increased at gas pressures ranging from 0 to 30 atmospheric Three other membrane-bound enzymes, 5'-nucleotidase, Na+- and K+-activated ATPase, and adenyl cyclase were slightly inhibited under comparable conditions.

L43 ANSWER 47 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1974:433904 HCAPLUS Full-text
DOCUMENT NUMBER: 81:33904
ORIGINAL REFERENCE NO.: 81:5421a,5424a
TITLE: Response of the honeybee antennal carbon dioxide receptors to nitrous oxide and xenon
AUTHOR(S): Stange, Gert; Diesendorf, Mark
CORPORATE SOURCE: Res. Sch. Biol. Sci., Aust. Natl. Univ., Canberra, Australia
SOURCE: Journal of Comparative Physiology (1973), 86(2), 139-58
CODEN: JRCPA3; ISSN: 0373-0859
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The response properties of the antennal carbon dioxide [124-38-9] receptors in workers of Apis mellifera were studied electrophysiol. by extracellular recordings from single cells. For >50% of the receptors, the absolute sensitivities to CO2 were higher than previously obsd; the lowest occurring thresholds being <1014 mols. CO2/ml air. The spontaneous spike discharge and

the response to CO2 were reversibly inhibited by nitrous oxide [10024-97-2] and xenon [7440-63-3]; N2O had a marginally stronger effect than Xe. For a gas mixture containing a given CO2 concentration above threshold, the inhibition consisted primarily of an increase in the response latency which was proportional to the inhibitor concentration For a given concentration of N2O or Xe, the magnitude of this effect decreased proportionally with an increase in CO2 concentration A simple empirical equation for the latency as a function of the concns. of excitatory stimulus and inhibitor was derived from the data. The consistency of the exptl. findings with kinetic models based on the law of mass action was investigated. It is suggested that the inhibition occurs via mol. ordering effects in the aqueous or lipid phases of either the cell membrane or the surrounding medium.

L43 ANSWER 48 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1974:419208 HCAPLUS Full-text
DOCUMENT NUMBER: 81:19208
ORIGINAL REFERENCE NO.: 81:3065a,3068a
TITLE: Competitive and noncompetitive electron capture of nitrous oxide with sulfur hexafluoride and electron thermalization in the gas-phase radiolysis of xenon
AUTHOR(S): Hatano, Yoshihiko; Shimamori, Hiroshi
CORPORATE SOURCE: Lab. Phys. Chem., Tokyo Inst. Technol., Tokyo, Japan
SOURCE: Journal of Physical Chemistry (1974), 78(10), 954-8
CODEN: JPCHAX; ISSN: 0022-3654
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The effect of the addition of SF6 on the N yield in the gas-phase radiolysis of Xe, which is an electron supplier, containing 3 .apprx. 20mole % of N2O was investigated. The decreasing N yield at higher concns. of SF6 (.apprx.2 mole % in Xe) is almost independent of the composition of the mixts. The relative rate of the electron capture process of N2O to that of SF6 decreases apparently by a factor of 102 with increase in the N2O mole %. The kinetic treatment shows that N formation in this system results from 2 different electron capture processes of N2O, that is, the dissociative electron attachment to N2O during the course of its thermalization and the nondissociative thermae electron attachment to N2O by a 3-body process. The rate constant for electron capture by SF6 is estimated to be .apprx.10-12 cm3 mol.-1 sec-1 which is much lower than that generally recognized. The yield of N nonscavengeable by SF6 was briefly discussed.
IT 7440-63-3, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(radiolysis of nitrous oxide and, electron capture in, sulfur hexafluoride effect on)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

Xe

IT 10024-97-2, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(radiolysis of xenon and, electron capture in, sulfur hexafluoride effect on)
RN 10024-97-2 HCAPLUS

CN Nitrogen oxide (N2O) (CA INDEX NAME)

L43 ANSWER 49 OF 49 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1962:455718 HCAPLUS Full-text
DOCUMENT NUMBER: 57:55718
ORIGINAL REFERENCE NO.: 57:11009h-i
TITLE: Reaction of oxygen atoms with acetylene to form ketene
AUTHOR(S): Haller, Ivan; Pimental, George C.
CORPORATE SOURCE: Univ. of California, Berkeley
SOURCE: Journal of the American Chemical Society (1962), 84, 2855-7
CODEN: JACSAT; ISSN: 0002-7863
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB Nitrous oxide, N2O, was photolyzed at 20°K. in solid argon containing acetylene, C2H2, or a mixture of C2D2 and C2HD. The photolysis source was a xenon resonance lamp emitting mainly at 1470 A. This radiation produces ground state O atoms (3P). Infrared spectra showed that reaction occurred with C2H2 to produce absorption at 2143 cm.-1 and with the deuterated acetylenes to produce absorption at 2142 and 2117 cm.-1 The absorptions are assigned to ketene, thus showing that 3P oxygen atoms can react with acetylene to produce ketene. The activation energy for this reaction is below 8.1 kcal./mole.

=> => D STAT QUE L71
L27 1 SEA FILE=REGISTRY ABB=ON PLU=ON XENON/CN
L28 2588 SEA FILE=REGISTRY ABB=ON PLU=ON XENON
L29 2587 SEA FILE=REGISTRY ABB=ON PLU=ON L28 NOT L27
L30 1 SEA FILE=REGISTRY ABB=ON PLU=ON "NITROUS OXIDE"/CN
L31 48 SEA FILE=REGISTRY ABB=ON PLU=ON NITROUS OXIDE?/CN
L32 47 SEA FILE=REGISTRY ABB=ON PLU=ON L31 NOT L30
L33 SEL PLU=ON L27 1- CHEM : 3 TERMS
L34 50875 SEA FILE=HCAPLUS ABB=ON PLU=ON L33
L35 53583 SEA FILE=HCAPLUS ABB=ON PLU=ON L34 OR L29 OR XENON?
L36 SEL PLU=ON L30 1- CHEM : 18 TERMS
L37 33962 SEA FILE=HCAPLUS ABB=ON PLU=ON L36
L38 117226 SEA FILE=HCAPLUS ABB=ON PLU=ON L37 OR L32 OR NITROUS OXIDE/CV OR (DINITROGEN OR NITROGEN OR NITROUS)(A)OXIDE
L39 320 SEA FILE=HCAPLUS ABB=ON PLU=ON L35(L)L38
L40 4010142 SEA FILE=HCAPLUS ABB=ON PLU=ON COMPN./CV OR COMPOSITION OR MIXTURE
L41 3756 SEA FILE=HCAPLUS ABB=ON PLU=ON L40(L)L35
L42 6003 SEA FILE=HCAPLUS ABB=ON PLU=ON L40(L)L38
L43 49 SEA FILE=HCAPLUS ABB=ON PLU=ON L41 AND L42 AND L39
L66 43340 SEA FILE=HCAPLUS ABB=ON PLU=ON ("10%" OR "11%" OR "12%" OR "13%" OR "14%" OR "15%" OR "16%" OR "17%" OR "18%" OR "19%" OR "20%" OR "21%" OR "22%" OR "23%" OR "24%" OR "25%" OR "26%" OR "27%" OR "28%" OR "29%" OR "30%")(5A)L38
L67 23820 SEA FILE=HCAPLUS ABB=ON PLU=ON ("31%" OR "32%" OR "33%" OR

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                "41%" OR "42%" OR "43%" OR "44%" OR "45%" OR "46%" OR "47%" OR
                "48%" OR "49%" OR "50%")(5A)L38
L68         1369 SEA FILE=HCAPLUS ABB=ON  PLU=ON  ("10%" OR "11%" OR "12%" OR
                "13%" OR "14%" OR "15%" OR "16%" OR "17%" OR "18%" OR "19%" OR
                "20%" OR "21%" OR "22%" OR "23%" OR "24%" OR "25%" OR "26%" OR
                "27%" OR "28%" OR "29%" OR "30%")(5A)L35
L69         1240 SEA FILE=HCAPLUS ABB=ON  PLU=ON  ("31%" OR "32%" OR "33%" OR
                "34%" OR "35%" OR "5%" OR "6%" OR "7%" OR "8%" OR "9%")(5A)L35
L70           36 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L66 OR L67) AND (L68 OR L69)

L71           27 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L70 NOT L43


=> D IBIB ABS HITSTR L71 1-27

L71  ANSWER 1 OF 27  HCAPLUS  COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER:         2008:229489  HCAPLUS  Full-text
DOCUMENT NUMBER:          148:368876
TITLE:                    GC method for detecting impurities in xenon gas
INVENTOR(S):              Xiong, Wanhong; Li, He; Xie, Xin; Hu, Jie
PATENT ASSIGNEE(S):       Wuhan Iron and Steel (Group) Company, Peop. Rep. China
SOURCE:                   Faming Zhuanli Shenqing Gongkai Shuomingshu, 11pp.
                          CODEN: CNXXEV
DOCUMENT TYPE:            Patent
LANGUAGE:                 Chinese
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.           KIND   DATE        APPLICATION NO.        DATE
     ---------------      ----   --------    --------------------   --------
     CN 101126750          A     20080220    CN 2007-10053332       20070921
PRIORITY APPLN. INFO.:                       CN 2007-10053332       20070921
AB   The title method comprises: (1) detecting H2, O2, N2, Kr, CO, CO2, CH4 and N2O
     by employing helium gas as standard gas and PDD chromatograph with following
     parameters: furnace temperature at 60-90°, operation time of 20-15 min,
     detector temperature at 130-200°, valve box temperature at 75-90°, pressure of
     carrier gas entering mol. sieve column of 0.23-0.29 MPa, and pressure of
     carrier gas entering macromol. microsphere column of 0.3-0.38 MPa, (2)
     detecting SF6 by inducing xenon gas sample into mol. sieve column after
     operating the chromatograph for 8-10 min and stopping xenon gas after 10-12
     min with following parameters: furnace temperature at 70°, operation time of
     17 min, detector temperature at 130-160°, valve box temperature at 75-90°, and
     pressure of carrier gas entering macromol. microsphere column of 0.3-0.38 MPa,
     (3) detecting C2F6 with following parameters: furnace temperature at 30-50°,
     operation time of 25-17 min, detector temperature at 130-200°, valve box
     temperature at 75-90°, and pressure of carrier gas entering macromol.
     microsphere column of 0.3-0.38 MPa, and (4) detecting CH4, C2H4, C2H6 and C3H8
     by employing FID chromatograph with following parameters: furnace temperature
     at 90-120°, operation time of 8-4 min, detector bottom temperature at 190-210°,
     pressure of carrier gas entering alumina column of 0.16-0.2 MPa, and flux
     ratio of air, hydrogen gas and carrier gas of (1-10):1:1.  With above method,
     test time is shortened.
IT   10024-97-2, Nitrous oxide, analysis
     RL: ANT (Analyte); ANST (Analytical study)
        (impurities determination in xenon gas by gas chromatog.)
RN   10024-97-2  HCAPLUS
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CN Nitrogen oxide (N2O) (CA INDEX NAME)

L71 ANSWER 2 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2008:227597 HCAPLUS Full-text
TITLE: The Effective Concentration 50 (EC50) for Propofol with 70% Xenon Versus 70% Nitrous Oxide
AUTHOR(S): Barakat, Ahmed R.; Schreiber, Markus N.; Flaschar, Joachim; Georgieff, Michael; Schraag, Stefan
CORPORATE SOURCE: Department of Perioperative Medicine, Golden Jubilee National Hospital, Clydebank, UK
SOURCE: Anesthesia & Analgesia (Hagerstown, MD, United States) (2008), 106(3), 823-829
CODEN: AACRAT; ISSN: 0003-2999
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Background: Xenon anesthesia has many favorable properties, such as pain modulation and organ protection. However, due to its MAC of 70%, it cannot be used as a sole anesthetic. We estimated the amount of propofol required to supplement xenon to produce adequate anesthesia in 50% and 95% of patients in comparison with nitrous oxide. Methods: We randomized 75 premedicated female patients to receive either 70% xenon or 70% nitrous oxide in oxygen supplemented by propofol target-controlled infusion anesthesia starting with 4.5 μg/mL for the first patient in each group. Dixon's up and down method was used to determine the propofol concentration for subsequent patients. After induction of anesthesia with propofol, patients breathed 70% xenon or 70% nitrous oxide in oxygen via a facemask for 15 min. They were then observed for movement in response to skin incision for 60 s after the incision and assigned as movers or nonmovers. Probit anal. was used to estimate the effective concentration 50% and 95% (EC50 and EC95) for propofol in both groups. Results: The EC50 for propofol with 70% xenon was 1.5μg/mL and the EC95 was 2.3 μg/mL. The EC50 and EC95 values for propofol with nitrous oxide were 2.2 and 8.2 μg/mL, resp. This implies a reduction of propofol requirements between 32% (EC50) and 72% (EC95) by xenon compared with nitrous oxide. The suppression of auditory evoked potentials was more pronounced with xenon than with nitrous oxide. Conclusion: Xenon seems to be clin. more potent than nitrous oxide, but still requires minimal supplement of a hypnotic anesthetic to suppress noxious stimulation during and after skin incision.

IT 10024-97-2, Nitrous oxide
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(xenon was clin. more potent than nitrous oxide as indicated by significant reduction in propofol requirements by former than latter in patient who underwent elective breast or body surface surgery)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L71 ANSWER 3 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:1224448 HCAPLUS Full-text
DOCUMENT NUMBER: 146:198407
TITLE: The differential effects of nitrous oxide and xenon on extracellular dopamine levels in the rat nucleus accumbens: a microdialysis study
AUTHOR(S): Sakamoto, Sachiyo; Nakao, Shinichi; Masuzawa, Munehiro; Inada, Takefumi; Maze, Mervyn; Franks, Nicholas P.; Shingu, Koh
CORPORATE SOURCE: Department of Anesthesiology, Kansai Medical University, Osaka, Japan
SOURCE: Anesthesia & Analgesia (Hagerstown, MD, United States) (2006), 103(6), 1459-1463
CODEN: AACRAT; ISSN: 0003-2999
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Dopamine release in the nucleus accumbens (NAC) plays a crucial role in the action of various psychotropic and addictive drugs, such as antagonists of the N-methyl-d-aspartate subtype of the glutamate. Although both nitrous oxide and xenon are N-methyl-d-aspartate receptor antagonists, they differ in their potential for producing neuropsychol. toxicity; therefore, we decided to examine their effects on both spontaneous and ketamine-induced extracellular dopamine levels in the NAC. A microdialysis probe was implanted into the NAC in each of 35 rats, which were randomly assigned to one of six groups: exposure to 40% O2, exposure to 60% nitrous oxide (0.27 MAC), exposure to 43% xenon (0.27 MAC) for 60 min, and three groups exposed to either 40% O2, 60% nitrous oxide, or 43% xenon for 70 min and 80 mg/kg ketamine was given i.p. 10 min after the initiation of gas exposure. Perfusate samples were collected every 20 min, and the dopamine levels were measured using a high-performance liquid chromatog. system. Nitrous oxide, but not xenon, significantly increased the dopamine level. Ketamine significantly increased the dopamine level, and this was significantly inhibited by xenon, but not by nitrous oxide. These data suggest that the difference in neuropsychol. activity between nitrous oxide and xenon is partly due to their differential effects on the mesolimbic dopamine system.

IT 10024-97-2, Nitrous oxide, biological studies
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(differential effects of nitrous oxide and xenon on ketamine-induced dopamine level in rat nucleus accumbens)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L71 ANSWER 4 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:811674 HCAPLUS Full-text
DOCUMENT NUMBER: 146:243975

TITLE: Effect of xenon on catecholamine and hemodynamic responses to surgical noxious stimulation in humans
AUTHOR(S): Kobayashi, Shunji; Katoh, Takasumi; Bito, Hiromichi; Sato, Shigehito
CORPORATE SOURCE: Department of Anesthesiology and Intensive Care, Hamamatsu University School of Medicine, Shizuoka, 431-3192, Japan
SOURCE: Journal of Clinical Anesthesia (2006), 18(5), 343-348
CODEN: JCLBE7; ISSN: 0952-8180
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

AB To determine the effect of xenon in combination anesthesia with sevoflurane on the catecholamine and hemodynamic responses to surgical noxious stimulation in humans. Randomized study. A university hospital. This study involved 32 female ASA phys. status I and II patients, age 20-58 years, scheduled for abdominal hysterectomy. Patients were randomly divided into 4 groups: group X50-S1.5, 50% xenon and 1.5% sevoflurane; group X70-S1.5, 70% xenon and 1.5% sevoflurane; group G70-S1.5, 70% nitrous oxide and 1.5% sevoflurane; and group S2.8, 2.8% sevoflurane. No premedication was administered to the patients, and anesthesia was induced by administration of sevoflurane in oxygen and 0.10 to 0.15 mg/kg of vecuronium. After tracheal intubation, the combination of anesthetics was started, and skin incision was performed after equilibration for more than 15 min. Systolic blood pressure and heart rate (HR) were recorded, and the plasma concns. of norepinephrine, epinephrine (E), and dopamine were measured 0, 2.5, 5, 7.5, 10, 12.5, and 15 min after skin incision. The maximal increase in the E concentration and the values of the area under the curve for E were significantly smaller in the X50-S1.5 and X70-S1.5 groups compared with that in the S2.8 group ($P < 0.05$). At 1 min after incision, the HR in X50-S1.5 was significantly lower than those in G70-S1.5 and S2.8 groups and the HR in X70-S1.5 was lower than that in S2.8 group ($P < 0.01$). The systolic blood pressure in S2.8 group at 1 min was significantly higher than those of other groups ($P < 0.01$). Combination anesthesia using xenon and sevoflurane suppresses the plasma E concentration and hemodynamic response after skin incision more effectively than sevoflurane anesthesia alone.

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L71 ANSWER 5 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:374900 HCAPLUS Full-text
DOCUMENT NUMBER: 145:328150
TITLE: Contrasting Roles of the N-Methyl-d-Aspartate Receptor in the Production of Immobilization by Conventional and Aromatic Anesthetics
AUTHOR(S): Eger, Edmond I., II; Liao, Mark; Laster, Michael J.; Won, Albert; Popovich, John; Raines, Douglas E.; Solt, Ken; Dutton, Robert C.; Cobos, Franklin V., II; Sonner, James M.
CORPORATE SOURCE: Department of Anesthesia and Perioperative Care, University of California, San Francisco, CA, USA
SOURCE: Anesthesia & Analgesia (Hagerstown, MD, United States) (2006), 102(5), 1397-1406
CODEN: AACRAT; ISSN: 0003-2999
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB We hypothesized that N-methyl-d-aspartate (NMDA) receptors mediate some or all of the capacity of inhaled anesthetics to prevent movement in the face of noxious stimulation, and that this capacity to prevent movement correlates directly with the in vitro capacity of such anesthetics to block the NMDA receptor. To test this hypothesis, we measured the effect of IV infusion of the NMDA blockers dizocilpine (MK-801) and (R)-4-(3-phosphonopropyl) piperazine-2-carboxylic acid (CPP) to decrease the MAC (the min. alveolar concentration of anesthetic that prevents movement in 50% of subjects given a noxious stimulation) of 8 conventional anesthetics (cyclopropane, desflurane, enflurane, halothane, isoflurane, nitrous oxide, sevoflurane, and xenon) and 8 aromatic compds. (benzene, fluorobenzene, o-difluorobenzene, p-difluorobenzene, 1,2,4-trifluorobenzene, 1,3,5-trifluorobenzene, pentafluorobenzene, and hexafluorobenzene) and, for comparison, etomidate. We postulated that MK-801 or CPP infusions would decrease MAC in inverse proportion to the in vitro capacity of these anesthetics to block the NMDA receptor. This notion proved correct for the aromatic inhaled anesthetics, but not for the conventional anesthetics. At the greatest infusion of MK-801 (32 μg · kg· min) the MACs of conventional anesthetics decreased by 59.4 ± 3.4% (mean ± sd) and at 8 μg · kg· min by 45.5 ± 4.2%, a decrease not significantly different from a 51.4 ± 19.0% decrease produced in the EC50 for etomidate, an anesthetic that acts solely by enhancing γ-amino butyric acid (GABA) receptors. We conclude that some aromatic anesthetics may produce immobility in the face of noxious stimulation by blocking the action of glutamate on NMDA receptors but that conventional inhaled anesthetics do not.

IT 10024-97-2, Nitrous oxide, biological studies
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(N-methyl-D-aspartate receptor blockade equally affected MAC of conventional anesthetics including nitrous oxide indicated NMDA receptor did not mediate capacity of conventional inhaled anesthetics to produce immobility in rat)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L71 ANSWER 6 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:966091 HCAPLUS Full-text
DOCUMENT NUMBER: 144:430
TITLE: The influence of xenon, nitrous oxide and nitrogen on gas bubble expansion during cardiopulmonary bypass
AUTHOR(S): Grocott, H. P.; Sato, Y.; Homi, H. M.; Smith, B. E.
CORPORATE SOURCE: Division of Cardiothoracic Anesthesiology and Critical Care Medicine, Department of Anesthesiology, Duke University Medical Center, Durham, NC, USA
SOURCE: European Journal of Anaesthesiology (2005), 22(5), 353-358
CODEN: EJANEG; ISSN: 0265-0215
PUBLISHER: Cambridge University Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Xenon may have favorable applications in the setting of cardiac surgery. Its advantages include a desirable hemodynamic profile as well as potential cardiac and neuroprotective properties. However, its low solubility may lead to enhanced diffusion into enclosed gas spaces. The purpose of this study was to compare the effects of xenon (Xe), nitrous oxide (N2O) and nitrogen (N2) on gas bubble size during cardiopulmonary bypass (CPB). Rats were randomized to receive 70% Xe, 26% oxygen (O2), 4% carbon dioxide (CO2) (xenon group); 70% N2O, 26% O2, 4% CO2 (nitrous oxide group) or 70% N2, 26% O2, 4% CO2 (nitrogen group) during 90 min of normothermic CPB. Small gas bubbles (300-500 μL; n = 12 per group) were injected into a bubble chamber on the venous side of the bypass circuit. After 10 min of equilibration, they were removed for volumetric anal. The increase in bubble size was 2 ± 2% with nitrogen, 17 ± 6% with xenon (P = 0.0192 vs. nitrogen) and 63 ± 23% with nitrous oxide (P = 0.0001 vs. nitrogen). The nitrous oxide group had significantly increased bubble size compared to the xenon group (P = 0.0001). During CPB, xenon anesthesia produced a small increase in gas bubble size compared to nitrogen. Nitrous oxide resulted in significantly larger bubbles compared to both nitrogen and xenon.

IT 10024-97-2, Nitrous oxide, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(xenon anesthesia produced small increase in gas bubble size compared to nitrogen whereas nitrous oxide resulted in significantly larger bubbles than nitrogen and xenon during cardiopulmonary bypass in rat)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L71 ANSWER 7 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:222303 HCAPLUS Full-text
DOCUMENT NUMBER: 142:450816
TITLE: Secondary Organic Aerosol Formation by Irradiation of 1,3,5-Trimethylbenzene-NOx-H2O in a New Reaction Chamber for Atmospheric Chemistry and Physics
AUTHOR(S): Paulsen, Dwane; Dommen, Josef; Kalberer, Markus; Prevot, Andre S. H.; Richter, Rene; Sax, Mirjam; Steinbacher, Martin; Weingartner, Ernest; Baltensperger, Urs
CORPORATE SOURCE: Laboratory of Atmospheric Chemistry, Paul Scherrer Institut, Villigen, CH-5232, Switz.
SOURCE: Environmental Science and Technology (2005), 39(8), 2668-2678
CODEN: ESTHAG; ISSN: 0013-936X
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A new environmental reaction smog chamber was built to simulate particle formation and growth similar to that expected in the atmospheric The organic material is formed from nucleation of photooxidized organic compds. The chamber is a 27-m3 fluorinated ethylene-propylene (FEP) bag suspended in a temperature-controlled enclosure. Four xenon arc lamps (16 kW total) are used

to irradiate primary gas components for expts. lasting up to 24 h. Expts. using irradiations of 1,3,5-trimethylbenzene-NOx-H2O at similar input concns. without seed particles were used to determine particle number and volume concentration wall loss rates of 0.209 ±0.018 and 0.139 ±0.070 h-1, resp. The particle formation was compared with and without propene.

REFERENCE COUNT: 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L71 ANSWER 8 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:1008861 HCAPLUS Full-text
DOCUMENT NUMBER: 142:254354
TITLE: Effects of xenon anaesthesia on intestinal oxygenation in acutely instrumented pigs
AUTHOR(S): Vagts, D. A.; Hecker, K.; Iber, T.; Roesner, J. P.; Spee, A.; Otto, B.; Rossaint, R.; Noeldge-Schomburg, G. F. E.
CORPORATE SOURCE: Klinik und Poliklinik fuer Anaesthesiologie und Intensivtherapie, Universitaet Rostock, Rostock, D-18055, Germany
SOURCE: British Journal of Anaesthesia (2004), 93(6), 833-841
CODEN: BJANAD; ISSN: 0007-0912
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Xenon is a narcotic gas that might be able to replace volatile anesthetics or nitrous oxide due to its favorable pharmacol. properties, such as providing hemodynamic stability. Intestinal oxygenation is affected by most volatile anesthetics as a result of cardiodepressive effects. Reducing oxygenation of the gut might be a factor leading to perioperative organ dysfunction. This animal study was designed to assess the effects of xenon on intestinal oxygenation. After ethical approval, 24 anesthetized, acutely instrumented pigs were randomly assigned to three groups: nine animals received xenon anesthesia with inspiratory concns. of 0, 20, 50 and 65% in addition to their basic i.v. anesthesia, nine animals served as a study control group, and five animals were used to assess model stability. Measurement of systemic and regional hemodynamic and oxygenation parameters was made 30 min after changing the xenon concentration Xenon elicited dose-dependent systemic hemodynamic changes: heart rate and cardiac output decreased by 30%, while mean arterial pressure was stable. Superior mesenteric artery blood flow was lower in the xenon group. Vascular resistance of the superior mesenteric artery increased. The small intestinal oxygen supply decreased with increasing xenon concentration; the mucosal tissue oxygen partial pressure decreased but did not reach hypoxic (<5 mm Hg) values. Serosal tissue oxygen partial pressure was maintained. Xenon, in addition to basic i.v. anesthesia, elicited a decrease in cardiac output and maintained mean arterial pressure. Intestinal oxygenation was maintained, although regional macrohaemodynamic perfusion decreased. Xenon does not impair intestinal oxygenation under physiol. conditions.

REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L71 ANSWER 9 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:627402 HCAPLUS Full-text
DOCUMENT NUMBER: 141:167659
TITLE: Xenon suppresses nociceptive reflex in newborn rat spinal cord in vitro; comparison with nitrous oxide
AUTHOR(S): Watanabe, Ippei; Takenoshita, Makoto; Sawada, Tadashi; Uchida, Ichiro; Mashimo, Takashi

CORPORATE SOURCE: Department of Anesthesiology, Shiga University of Medical Science, Shiga, Otsu, 520-2192, Japan
SOURCE: European Journal of Pharmacology (2004), 496(1-3), 71-76
CODEN: EJPHAZ; ISSN: 0014-2999
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Although analgesic action of xenon has been reported, little is known about the effect of xenon at the spinal cord, which plays a crucial role in nociceptive transmission. The authors studied the effect of xenon on nociceptive reflex (the slow ventral root potential) and the monosynaptic reflex in neonatal rat spinal cord in vitro in comparison with nitrous oxide. Xenon (30%) and nitrous oxide (30%) were applied for 17 min through superfusing artificial cerebrospinal fluid. Xenon and nitrous oxide significantly reduced the amplitude of nociceptive reflex by .apprx.70% and .apprx.25%, resp. Xenon and nitrous oxide also significantly reduced the amplitude of the monosynaptic reflex by .apprx.35% and .apprx.15%, resp. These results indicate that xenon suppressed the synaptic transmission at the spinal cord, especially those of the slow ventral root potential, which reflect nociceptive transmission.

IT 10024-97-2, Nitrous oxide, biological studies
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(xenon suppresses nociceptive reflex in newborn rat spinal cord in vitro and comparison with nitrous oxide)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L71 ANSWER 10 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:934197 HCAPLUS Full-text
DOCUMENT NUMBER: 139:46904
TITLE: The analgesic effect of xenon on the formalin test in rats: a comparison with nitrous oxide
AUTHOR(S): Fukuda, Taeko; Nishimoto, Chikako; Hisano, Setsuji; Miyabe, Masayuki; Toyooka, Hidenori
CORPORATE SOURCE: Department of Anesthesiology, Institute of Clinical Medicine, Tsukuba University, Tsukuba-city, Japan
SOURCE: Anesthesia & Analgesia (Baltimore, MD, United States) (2002), 95(5), 1300-1304
CODEN: AACRAT; ISSN: 0003-2999
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB To investigate the analgesic effects of xenon, we performed formalin tests in rats under 0.5 min. alveolar anesthetic concentration xenon or nitrous oxide and stained the lumbar spinal cord for c-fos and the phosphorylated N-methyl-D-aspartate (NMDA) receptor by using the avidin-biotin-peroxidase method. After 20 min of 79% xenon, 68% nitrous oxide, or 100% inhaled oxygen, 10% formalin (100 μL) was injected into the left rear paw of the animals except

for a control group. Nociceptive behavior was observed for 1 h. The rats were killed 2 h after the formalin injection, and the lumbar spinal cord was stained for c-fos or the phosphorylated NMDA receptor immunohistochem. Animals in the xenon and nitrous oxide groups showed less nociceptive behavior than did the oxygen group. Although the number of c-fos-pos. cells in the lumbar spinal cord in the nitrous oxide group was not decreased, that in the xenon group decreased. The number of phosphorylated NMDA receptor-pos. cells in the xenon group was significantly less than in the nitrous oxide and oxygen groups. Inhaled xenon suppressed nociceptive behaviors, c-fos expression, and activation of the NMDA receptor during the formalin test in rats. These results confirm that xenon's analgesic effects result from inhibition of the NMDA receptor.

IT 10024-97-2, Nitrous oxide, biological studies
RL: PAC (Pharmacological activity); BIOL (Biological study)
(analgesic effect of xenon on formalin test in rats and comparison with nitrous oxide)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L71 ANSWER 11 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:529406 HCAPLUS Full-text
DOCUMENT NUMBER: 138:100817
TITLE: Comparative effects of xenon and nitrous oxide on diaphragmatic contractility in dogs
AUTHOR(S): Hoshi, T.; Fujii, Y.; Toyooka, H.
CORPORATE SOURCE: Department of Anesthesiology, University of Tsukuba Institute of Clinical Medicine, Ibaraki, Japan
SOURCE: Acta Anaesthesiologica Scandinavica (2002), 46(6), 699-702
CODEN: AANEAB; ISSN: 0001-5172
PUBLISHER: Blackwell Munksgaard
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Xenon at two different concns. (30%, 60%) has no effect on diaphragmatic contractility. This study was undertaken to compare the effects of xenon and nitrous oxide (N2O), a commonly used and well-established gas anesthetic, on diaphragmatic contractility in dogs. Twenty-one pentobarbitone-anesthetized dogs were randomly divided into three groups of seven each: group 1 received xenon 30% (0.25 MAC) in oxygen; group 2 received N2O 47% (0.25 MAC) in oxygen; and group 3 received N2O 60% (0.32 MAC) in oxygen. Diaphragmatic contractility was assessed by transdiaphragmatic pressure (Pdi) at low- (20-Hz) and high-frequency (100-Hz) stimulation, after maintaining 60 min of stable condition. The integrated elec. activity of diaphragm (Edi) to each stimulus was measured. With an inhalation of xenon 30%, N2O 47%, or N2O 60%, Pdi and Edi at both stimuli did not change. No difference in Pdi or Edi was observed among the groups. When used at clin. concentration, xenon or N2O does not affect contractility and elec. activity of the diaphragm in dogs.

IT 10024-97-2, Nitrous oxide, biological studies
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(comparative effects of xenon and nitrous oxide on diaphragmatic contractility in dogs)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L71 ANSWER 12 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:495570 HCAPLUS Full-text
DOCUMENT NUMBER: 138:83234
TITLE: Effects of xenon on in vitro and in vivo models of neuronal injury
AUTHOR(S): Wilhelm, Stefan; Ma, Daqing; Maze, Mervyn; Franks, Nicholas P.
CORPORATE SOURCE: Chelsea and Westminster Hospital, London, UK
SOURCE: Anesthesiology (2002), 96(6), 1485-1491
CODEN: ANESAV; ISSN: 0003-3022
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Background: Xenon, the "inert" gaseous anesthetic, is an antagonist at the N-methyl-D-aspartate (NMDA)-type glutamate receptor. Because of the pivotal role that NMDA receptors play in neuronal injury, the authors investigated the efficacy of xenon as a neuroprotectant in both in vitro and in vivo paradigms. Methods: In a mouse neuronal-glial cell coculture, injury was provoked either by NMDA, glutamate, or oxygen deprivation and assessed by the release of lactate dehydrogenase into the culture medium. Increasing concns. of either xenon or nitrogen (10-75% of an atmospheric) were coadministered and maintained until injury was assessed. In sep. in vivo expts., rats were administered N-methyl-DL-aspartate and killed 3 h later. Injury was quantified by histol. assessment of neuronal degeneration in the arcuate nucleus of the hypothalamus. Results: Xenon exerted a concentration-dependent protection against neuronal injury provoked by NMDA (IC50 = 19±6% atm), glutamate (IC50 = 28±8% atm), and oxygen deprivation (IC50 = 10±4% atm). Xenon (60% atm) reduced lactate dehydrogenase release to baseline concns. with oxygen deprivation, whereas xenon (75% atm) reduced lactate dehydrogenase release by 80% with either NMDA- or glutamate-induced injury. In an in vivo brain injury model in rats, xenon exerted a concentration-dependent protective effect (IC50 = 78±8% atm) and reduced the injury by 45% at the highest xenon concentration tested (75% atm). Conclusions: Xenon, when coadministered with the injurious agent, exerts a concentration-dependent neuroprotective effect at concns. below which anesthesia is produced in rodents. Unlike either nitrous oxide or ketamine (other anesthetics with NMDA antagonist properties), xenon is devoid of both neurotoxicity and clin. significant adverse hemodynamic properties. Studies are proposed to determine whether xenon can be used as a neuroprotectant in certain clin. settings.
REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L71 ANSWER 13 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:245575 HCAPLUS Full-text
DOCUMENT NUMBER: 137:257520

TITLE: The diverse actions of volatile and gaseous anesthetics on human-cloned 5-hydroxytryptamine3 receptors expressed in Xenopus oocytes
AUTHOR(S): Suzuki, Takahiro; Koyama, Hideki; Sugimoto, Masahiro; Uchida, Ichiro; Mashimo, Takashi
CORPORATE SOURCE: Department of Anesthesiology, Osaka University Medical School, Osaka, 565-0871, Japan
SOURCE: Anesthesiology (2002), 96(3), 699-704
CODEN: ANESAV; ISSN: 0003-3022
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB General anesthetics can modulate the 5-hydroxytryptamine type 3 (5-HT3) receptor, which may be involved in processes mediating nausea and vomiting, and peripheral nociception. The effects of the new volatile anesthetic sevoflurane and the gaseous anesthetics nitrous oxide (N2O) and xenon (Xe) on the 5-HT3 receptor have not been well-characterized. Homomeric human-cloned 5-HT3A receptors were expressed in Xenopus oocytes. The effects of halothane, isoflurane, sevoflurane, N2O, and Xe on 5-HT-induced currents were studied using a two-electrode, voltage clamping technique. Halothane (1%) and isoflurane (1%) potentiated 1 μM 5-HT-induced currents to 182 ± 12 and 117 ± 2%, resp. In contrast, sevoflurane (1%), N2O (70%), and Xe (70%) inhibited 5-HT-induced currents to 76 ± 1, 77 ± 4, and 34 ± 4%, resp. The inhibitory effects were noncompetitive for sevoflurane and competitive for N2O and Xe. None of these inhibitory effects showed voltage dependency. Inhalational general anesthetics produce diverse effects on the 5-HT3 receptor. Both halothane and isoflurane enhanced 5-HT3 receptor function in a concentration-dependent manner, which is consistent with previous studies. Sevoflurane inhibited the 5-HT3 receptor noncompetitively, whereas N2O and Xe inhibited the 5-HT3 receptor competitively, suggesting the inhibitory mechanism of sevoflurane might be different from those of N2O and Xe.

IT 10024-97-2, Nitrous oxide, biological studies
RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(diverse actions of volatile and gaseous anesthetics on human-cloned 5-hydroxytryptamine3 (5-HT3) receptors expressed in Xenopus oocytes)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L71 ANSWER 14 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:120934 HCAPLUS Full-text
DOCUMENT NUMBER: 135:132264
TITLE: Xenon inhibits but N2O enhances ketamine-induced c-Fos expression in the rat posterior cingulate and retrosplenial cortices
AUTHOR(S): Nagata, Atsushi; Nakao, Shin-ichi; Nishizawa, Nobuyasu; Masuzawa, Munehiro; Inada, Takefumi; Murao, Kohei; Miyamoto, Etsuko; Shingu, Koh
CORPORATE SOURCE: Department of Anesthesiology, Kansai Medical University, Osaka, 570-8507, Japan

SOURCE: Anesthesia & Analgesia (Baltimore) (2001), 92(2), 362-368
CODEN: AACRAT; ISSN: 0003-2999
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Both nitrous oxide (N2O) and xenon are N-methyl-D-aspartate receptor antagonists that have psychotomimetic effects and cause neuronal injuries in the posterior cingulate and retrosplenial cortices. We investigated the effect of xenon, xenon with ketamine, N2O, and N2O with ketamine on c-Fos expression in the rat posterior cingulate and retrosplenial cortices, a marker of psychotomimetic effects. Brain sections were prepared, and c-Fos expression was detected with immunohistochem. methods. A loss of microtubule-associated protein 2, a marker of neuronal injury, was also investigated. The number of Fos-like immunoreactivity pos. cells by ketamine IV at a dose of 5 mg/kg under 70% N2O (128±12 cells per 0.5 mm2) was significantly more than those under 30% (15±2 cells per 0.5 mm2) and 70% xenon (2±1 cells per 0.5 mm2). Despite differences in c-fos immunoreactivity, there was no loss of microtubule-associated protein 2 immunoreactivity in any group examined Xenon may suppress the adverse neuronal effects of ketamine, and combined use of xenon and ketamine seems to be safe in respect to neuronal adverse effects.

IT 10024-97-2, Nitrogen oxide (N2O), biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(xenon inhibits but N2O enhances ketamine-induced c-Fos expression in rat posterior cingulate and retrosplenial cortices)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L71 ANSWER 15 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:850181 HCAPLUS Full-text
DOCUMENT NUMBER: 135:40807
TITLE: Minimum alveolar concentration-awake of xenon alone and in combination with isoflurane or sevoflurane
AUTHOR(S): Goto, Takahisa; Nakata, Yoshinori; Ishiguro, Yoshiki; Niimi, Yoshinari; Suwa, Kunio; Morita, Shigeho
CORPORATE SOURCE: Department of Anesthesia, Teikyo University School of Medicine, Ichihara Hospital, Ichihara, 299-0111, Japan
SOURCE: Anesthesiology (2000), 93(5), 1188-1193
CODEN: ANESAV; ISSN: 0003-3022
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Background: The min. alveolar concentration (MAC)-awake is a traditional index of hypnotic potency of an inhalational anesthetic. The MAC-awake of xenon, an inert gas with anesthetic properties (MAC = 71%), has not been determined It is also unknown how xenon interacts with isoflurane or sevoflurane on the MAC-awake. Methods: In the first part of the study, 90 female patients received xenon, nitrous oxide (N2O), isoflurane, or sevoflurane supplemented with

epidural anesthesia (n = 36 for xenon and n = 10 per group for other anesthetics). In the second part, 72 addnl. patients received either xenon or N2O combined with the 0.5 times MAC-awake concentration of isoflurane or sevoflurane (0.2% and 0.3%, resp., based on the results of the first part; n = 10 per group). During emergence, the concentration of an assigned anesthetic (xenon or N2O only in the second part) was decreased in 0.1 MAC decrements every 15 min from 0.8 MAC or from 70% in the case of N2O until the patient followed the command to either open her eyes or to squeeze and release the investigator's hand. The concentration midway between the value permitting the first response to command and that just preventing it was defined as the MAC-awake. Results: The MAC-awake were as follows: xenon, 32.6±6.1% (mean ± SD) or 0.46±0.09 MAC; N2O, 63.3±7.1% (0.61±0.07 MAC); isoflurane, 0.40±0.07% (0.35±0.06 MAC); and sevoflurane, 0.59±0.10% (0.35±0.06 MAC). Addition of the 0.5 MAC-awake concns. of isoflurane and sevoflurane reduced the MAC-awake of xenon to 0.50±0.15 and 0.51±0.16 times its MAC-awake as a sole agent, but that of N2O to the values significantly greater than 0.5 times its MAC-awake as a sole agent (0.68±0.12 and 0.66±0.14 times MAC-awake; P < 0.01, anal. of variance and Dunnett's test). Conclusions: The MAC-awake of xenon is 33% or 0.46 times its MAC. In terms of the MAC-fraction, this is smaller than that for N2O but greater than those for isoflurane and sevoflurane. Un-like N2O, xenon interacts additively with isoflurane and sevoflurane on MAC-awake.

IT 10024-97-2, Nitrogen oxide (N2O),
biological studies
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(min. alveolar concentration-awake of xenon alone and in combination with isoflurane or sevoflurane in humans)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L71 ANSWER 16 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:544495 HCAPLUS Full-text
DOCUMENT NUMBER: 134:399
TITLE: Pressure reversal of anaesthesia at a molecular level
AUTHOR(S): Daniels, S.
CORPORATE SOURCE: Welsh School of Pharmacy, Cardiff University, Cardiff, CF10 3XF, UK
SOURCE: Progress in Anesthetic Mechanism (2000), 6, 590-596
CODEN: PAMEF6; ISSN: 0919-6390
PUBLISHER: Research Group of Anesthetic Mechanism in Japan
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Pressures of the order of 10 MPa can reverse the effects of general anesthetics in vivo. This was previously interpreted in terms of a non-specific physicochem. interaction. However, it is now recognized that both general anesthetics and pressure have specific actions at ionotropic receptors. This paper describes expts. in which the interaction was observed between the action of 4 anesthetics (N2O, xenon, pentobarbitone, and propofol)

and pressure, applied using He, at the homomeric human α1 glycine receptor expressed in Xenopus oocytes. It was found that the action of both N2O and propofol but not xenon and pentobarbitone was reversed by 10 MPa pressure. It is suggested that this is evidence that pentobarbitone, propofol and the gaseous anesthetics interact with the glycine receptor at distinct sites.

IT 10024-97-2, Nitrous oxide, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(pressure reversal of anesthesia at mol. level)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L71 ANSWER 17 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:283177 HCAPLUS Full-text
DOCUMENT NUMBER: 132:288707
TITLE: Plasma concentration of fentanyl with xenon to block somatic and hemodynamic responses to surgical incision
AUTHOR(S): Nakata, Yoshinori; Goto, Takahisa; Saito, Hayato; Ishiguro, Yoshiki; Terui, Katsuo; Kawakami, Hiromasa; Tsuruta, Yoshihiko; Niimi, Yoshinari; Morita, Shigeho
CORPORATE SOURCE: Departments of Anesthesia and Medical Engineering, Teikyo University School of Medicine Ichihara Hospital, Chiba, 299-0111, Japan
SOURCE: Anesthesiology (2000), 92(4), 1043-1048
CODEN: ANESAV; ISSN: 0003-3022
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Although anesthesia with xenon has been supplemented with fentanyl, its requirement has not been established. This study was conducted to determine the plasma concns. of fentanyl necessary to suppress somatic and hemodynamic responses to surgical incision in 50% patients in the presence of 0.7 min. alveolar concentration (MAC) xenon. Twenty-five patients were allocated randomly to predetd. fentanyl concentration between 0.5 and 4.0 ng/mL during 0.7 MAC xenon anesthesia. Fentanyl was administered using a pharmacokinetic model-driven computer-assisted continuous infusion device. At surgical incision each patient was monitored for somatic and hemodynamic responses. A somatic response was defined as any purposeful bodily movement. A pos. hemodynamic response was defined as a more than 15% increase in heart rate or mean arterial pressure more than the preincision value. The concns. of fentanyl to prevent somatic and hemodynamic responses in 50% of patients were calculated using logistic regression. The concentration of fentanyl to prevent a somatic response to skin incision in 50% of patients in the presence of 0.7 MAC xenon was 0.72 ± 0.07 ng/mL and to prevent a hemodynamic response was 0.94 ± 0.06 ng/mL. Comparing these results with previously published results in the presence of 70% nitrous oxide, the fentanyl requirement in xenon anesthesia is smaller than that in the equianesthetic nitrous oxide anesthesia.

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L71 ANSWER 18 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1999:641857 HCAPLUS Full-text
DOCUMENT NUMBER: 131:237898
TITLE: Thermoregulatory thresholds for vasoconstriction in patients anesthetized with various 1-minimum alveolar concentration combinations of xenon, nitrous oxide, and isoflurane
AUTHOR(S): Goto, Takahisa; Matsukawa, Takashi; Sessler, Daniel I.; Uezono, Shoichi; Ishiguro, Yoshiki; Ozaki, Makoto; Morita, Shigeho
CORPORATE SOURCE: Department of Anesthesia, Teikyo University Ichihara Hospital, Japan
SOURCE: Anesthesiology (1999), 91(3), 626-632
CODEN: ANESAV; ISSN: 0003-3022
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Nitrous oxide limits intraoperative hypothermia because the vasoconstriction threshold with nitrous oxide is higher than with equi-min. alveolar concns. of sevoflurane or isoflurane, presumably because of its stimulating actions on the sympathetic nervous system. Xenon, in contrast, does not cause sympathetic activation. Therefore, the authors tested the hypothesis that the vasoconstriction threshold during xenon-isoflurane anesthesia is less than during nitrous oxide-isoflurane anesthesia or isoflurane alone. Fifteen patients each were randomly assigned to one of three 1-min. alveolar concentration anesthetic regimens: (1) xenon, 43% (0.6 min. alveolar concentration) and isoflurane, 0.5% (0.4 min. alveolar concentration); (2) nitrous oxide, 63% (0.6 min. alveolar concentration) and isoflurane 0.5%; or (3) isoflurane, 1.2%. Ambient temperature was maintained near 23°C and the patients were not actively warmed. Thermoregulatory vasoconstriction was evaluated using forearm-minus-fingertip skin temperature gradients. A gradient exceeding 0°C indicated significant vasoconstriction. The core-temperature threshold that would have been observed if skin had been maintained at 33°C was calculated from mean skin and distal esophageal temps. at the time of vasoconstriction. The patients' demog. variables, preinduction core temps., ambient operating room temps., and fluid balance were comparable among the three groups. Heart rates were significantly less during xenon anesthesia than with nitrous oxide. The calculated vasoconstriction threshold was lowest with xenon (34.6 ± 0.8°C, mean ± SD), intermediate with isoflurane alone (35.1 ± 0.6°C), and highest with nitrous oxide (35.7 ± 0.6°C). Each of the thresholds differed significantly. Xenon inhibits thermoregulatory control more than isoflurane, whereas nitrous oxide is the least effective in this respect.

IT 10024-97-2, Nitrogen oxide (N2O), biological studies
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(thermoregulatory thresholds for vasoconstriction in human patients anesthetized with various 1-min. alveolar concentration combinations of xenon, nitrous oxide, and isoflurane)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L71 ANSWER 19 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1999:130104 HCAPLUS Full-text
DOCUMENT NUMBER: 130:261965
TITLE: Effects of xenon on hemodynamic responses to skin incision in humans
AUTHOR(S): Nakata, Yoshinori; Goto, Takahisa; Morita, Shigeho
CORPORATE SOURCE: Department of Anesthesia, Teikyo University School of Medicine Ichihara Hospital, Chiba, Japan
SOURCE: Anesthesiology (1999), 90(2), 406-410
CODEN: ANESAV; ISSN: 0003-3022
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors evaluated the hemodynamic suppressive effects of xenon in combination with sevoflurane at skin incision in patients undergoing surgery. Forty patients were assigned randomly to receive one of the following four anesthetics: 1.3 min. alveolar concentration (MAC) sevoflurane, 0.7 MAC xenon with 0.6 MAC sevoflurane, 1 MAC xenon with 0.3 MAC sevoflurane, or 0.7 MAC nitrous oxide with 0.6 MAC sevoflurane (n = 10 each group). Systolic blood pressure and heart rate were measured before anesthesia, before incision, and approx. 1 min after incision. The changes in hemodynamic variables in response to incision were less with sevoflurane in combination with xenon and nitrous oxide than with sevoflurane alone. Changes in heart rate (in beats/min) were 19 ± 11 (± SD) for sevoflurane alone, 11±6 for 0.7 MAC xenon-sevoflurane, 4 ± 4 for 1 MAC xenon-sevoflurane, and 8 ± 7 for nitrous oxide-sevoflurane. Changes in systolic blood pressure were 35 ± 18 mmHg for sevoflurane alone, 18 ± 8 mmHg for 0.7 MAC xenon-sevoflurane, 16 ± 7 mmHg for 1 MAC xenon-sevoflurane, and 14 ± 10 mmHg for nitrous oxide-sevoflurane. Xenon and nitrous oxide in combination with sevoflurane can reduce hemodynamic responses to skin incision compared with sevoflurane alone. One probable explanation may be that xenon has analgesic properties similar to those of nitrous oxide, although the exact mechanism is yet to be determined
IT 10024-97-2, Nitrous oxide, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(effects of xenon on hemodynamic responses to skin incision in humans)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L71 ANSWER 20 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1998:784930 HCAPLUS Full-text

DOCUMENT NUMBER: 130:148585
TITLE: Comparison of the analgesic potency of xenon and nitrous oxide in humans evaluated by experimental pain
AUTHOR(S): Petersen-Felix, S.; Luginbuhl, M.; Schnider, T. W.; Curatolo, M.; Arendt-Nielsen, L.; Zbinden, A. M.
CORPORATE SOURCE: Department of Anaesthesiology and Intensive Care, University Hospital of Bern, Bern, Switz.
SOURCE: British Journal of Anaesthesia (1998), 81(5), 742-747
CODEN: BJANAD; ISSN: 0007-0912
PUBLISHER: Professional and Scientific Publications
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We have compared the analgesic potency of MAC-equivalent concns. of xenon (10, 20, 30 and 40%) and nitrous oxide (15, 30, 45 and 60%) in humans using a multimodal exptl. pain testing and assessment technique. We tested 12 healthy volunteers in a randomized, single-blind, crossover study. The following exptl. pain tests were used: nociceptive reflex to repeated stimuli; pain tolerance to maximal effort tourniquet ischemia; elec. stimulation; mech. pressure; and cold. Reaction time was also measured. Xenon and nitrous oxide produced analgesia to ischemic, elec. and mech. stimulation, but not to cold pain. There was no difference in MAC-equivalent concns. of xenon and nitrous oxide. Both increased reaction time in a similar manner. Xenon and nitrous oxide evoked nausea and vomiting in a large number of volunteers.
IT 10024-97-2, Nitrous oxide, biological studies
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(xenon and nitrous oxide analgesic potency comparison of exptl. pain in humans)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L71 ANSWER 21 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1997:431358 HCAPLUS Full-text
DOCUMENT NUMBER: 127:104241
TITLE: Xenon provides faster emergence from anesthesia than does nitrous oxide-sevoflurane or nitrous oxide-isoflurane
AUTHOR(S): Goto, Takahisa; Saito, Hayato; Shinkai, Masahiro; Nakata, Yoshinori; Ichinose, Fumito; Morita, Shigeho
CORPORATE SOURCE: Departments of Anesthesia and Medical Engineering, School of Medicine, Ichihara Hospital, Teikyo University, Ichihara, 299-01, Japan
SOURCE: Anesthesiology (1997), 86(6), 1273-1278
CODEN: ANESAV; ISSN: 0003-3022
PUBLISHER: Lippincott-Raven
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Xenon, an inert gas with anesthetic properties (min. alveolar concentration [MAC] = 71%), has an extremely low blood:gas partition coefficient (0.14).

Therefore, we predicted that xenon would provide more rapid emergence from anesthesia than does N2O+isoflurane or N2O+sevoflurane of equivalent MAC. Thirty American Society of Anesthesiologists class I or II patients undergoing total abdominal hysterectomy were randomly assigned to receive 60% xenon, 60% N2O + 0.5% isoflurane, or 60% N2O + 0.7% sevoflurane (all concns. are end-tidal: n = 10 per group). After placement of an epidural catheter, anesthesia was induced with standardized doses of midazolam, thiopental, and fentanyl. Thirty minutes later, xenon, N2O+isoflurane, or N2O+sevoflurane was started as previously assigned. These regimens were supplemented with epidural anesthesia with mepivacaine so that the mean arterial pressure and heart rate were controlled within 20% of the preoperative values. At the end of operation lasting approx. 2 h, all inhalational anesthetics were discontinued, and the patients were allowed to awaken while breathing spontaneously on an 8 l/min inflow of oxygen. A blinded investigator recorded the time until the patient opened her eyes on command (T1), was judged ready for extubation (T2), could correctly state her name, her date of birth, and the name of the hospital (T3), and could count backward from 10 to 1 in less than 15 s (T4). Emergence times from xenon anesthesia were: T1, 3.4 ± 0.9 min; T2, 3.6 ± 1 min; T3, 5.2 ± 1.4 min; and T4, 6.0 ± 1.6 min (mean ± SD). These were one half to one third of those from N2O+sevoflurane (T1, 6.0 ± 1.7 min; T4, 10.5 ± 2.5 min) or N2O+isoflurane (T1, 7.0 ± 1.9 min; T4, 14.3 ± 2.8 min) anesthesia. The three groups did not differ in terms of patient demographics, the duration of anesthesia, the amount of epidural mepivacaine administered, or the postoperative pain rating. No patient could recalls intraoperative events. Emergence from xenon anesthesia is two or three times faster than that from equal-MAC N2O+isoflurane or N2O+sevoflurane anesthesia.

IT 10024-97-2, Nitrous oxide, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(xenon provides faster emergence from anesthesia than does nitrous oxide-sevoflurane or nitrous oxide-isoflurane in humans)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L71 ANSWER 22 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1995:976230 HCAPLUS Full-text
DOCUMENT NUMBER: 124:68024
TITLE: VLE for cryogenic methyl fluoride + nitrous oxide + xenon at 182.33 K
AUTHOR(S): Fonseca, I. M. A.; Lobo, L. Q.
CORPORATE SOURCE: Departamento de Engenharia Quimica, Universidade de Coimbra, Coimbra, 3000, Port.
SOURCE: Fluid Phase Equilibria (1995), 113(1-2), 127-38
CODEN: FPEQDT; ISSN: 0378-3812
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

AB An apparatus for accurate VLE measurements on ternary cryogenic systems is briefly described. It is a modified version of that introduced and developed by Staveley and co-workers (1981) for binary mixts. The apparatus was tested against published results for CH3F + Xe and N2O + Xe, at 182.33 K, the agreement being much satisfactory for both systems. The mixture CH3F + N2O + Xe at the same temperature was selected for the first measurements on a ternary system carried out using the modified exptl. arrangement, the operation of which is also summarized. VLE results for 61 ternary points are presented together with the evaluation of the excess molar Gibbs free energy GE for the liquid mixture at that temperature No ternary azeotrope has been found. GE for the three component liquid mixture is not an additive function of the GijE for its constituent binary mixts. For the equimolar (ternary) mixture G1/3E = (500±6) J mol-1, at 182.33 K.

IT 10024-97-2, Nitrous oxide, properties
RL: PRP (Properties)
(systems; vapor-liquid equilibrium for ternary cryogenic system Me fluoride +
nitrous oxide + xenon)

RN 10024-97-2 HCAPLUS

CN Nitrogen oxide (N2O) (CA INDEX NAME)

L71 ANSWER 23 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1995:569965 HCAPLUS Full-text

DOCUMENT NUMBER: 123:807

ORIGINAL REFERENCE NO.: 123:183a,186a

TITLE: Nitrous oxide and xenon enhance phospholipid-N-methylation in rat brain synaptic plasma membranes

AUTHOR(S): Horn, J. L.; Janicki, P. K.; Franks, J. J.

CORPORATE SOURCE: Department of Anesthesiology, Vanderbilt University Medical Center, Nashville, TN, USA

SOURCE: Life Sciences (1995), 56(25), PL455-PL460
CODEN: LIFSAK; ISSN: 0024-3205

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Halothane and isoflurane increase the rate of phospholipid methylation (PLM) in rat brain synaptosomal membranes, a process linked to the coupling of neuronal excitation to neurotransmitter release. In contrast, synaptic plasma membrane (SPM) Ca2+ ATPase (PMCA) pumping is reduced by exposure to halothane, isoflurane, xenon, and nitrous oxide (N2O). To examine further the relationship between PLM, PMCA and anesthetic action, we investigated the effect of clin. relevant concns. of two less potent anesthetic gases, N2O and xenon, on PLM in SPM. Biochem. assays were performed on SPM exposed to 1.3 MAC of N2O (2 atm), 1.3 MAC of xenon (1.23 atm) or an equivalent pressure of helium for control. N2O or xenon exposure increased PLM to 115% or 113%, resp., of helium control ($p<0.02$). Similar exposures to N2O or xenon depressed PMCA activity to 78% and 85% of control ($p<0.05$). Observations that PLM and PMCA are both altered by a wide variety of inhalation anesthetic agents at clin. relevant partial pressures lend support to a possible involvement and interaction of these processes in anesthetic action.

IT 10024-97-2, Nitrous oxide, biological studies

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(nitrous oxide and xenon enhance phospholipid-N-methylation in rat brain synaptic plasma membranes)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L71 ANSWER 24 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1994:646075 HCAPLUS Full-text
DOCUMENT NUMBER: 121:246075
ORIGINAL REFERENCE NO.: 121:44679a,44682a
TITLE: Effects of nitrous oxide on human regional cerebral blood flow and isolated pial arteries
AUTHOR(S): Reinstrup, Peter; Ryding, Erik; Algotsson, Lars; Berntman, Leif; Uski, Tore
CORPORATE SOURCE: Gentofte Hospital, University Copenhagen, Hellerup, DK-2900, Den.
SOURCE: Anesthesiology (1994), 81(2), 396-402
CODEN: ANESAV; ISSN: 0003-3022
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Results from previous studies on the effect of nitrous oxide (N2O) on the cerebral circulation are conflicting. Early reports claim N2O to have no effect whereas recent findings demonstrate a cerebral cortical vasodilatation during N2O inhalation, but the regional cerebral blood flow (CBF) in the subcortical structures is unknown. Regional CBF was measured three-dimensionally with single photon emission computer-aided tomog. after injection of xenon 133 in 8 spontaneously breathing men (mean age 29.6 yr) during normocapnia and hypocapnia with and without inhalation of 50% N2O. 8 Isolated human pial arterial segments were mounted in organ baths. The segments were contracted with prostaglandin F2α and subjected to 30% oxygen and 5.6% carbon dioxide in nitrogen or N2O. Normocapnic young men had a global CBF of 55 mL□E00 g-1 □Emin-1. Decreasing end-tidal CO2 tension by 1.3 kPa (9.3 mmHg) reduced CBF uniformly, with a decrease in global CBF to 45 mL□E00 g-1∑min-1. During normocapnia, inhalation of 50% N2O increased mean CBF to 67 mL□E00 g-1∑min-1. Inhalation of 50% N2O during hypocapnia increased mean CBF to 63 mL□E00 g-1∑min-1. During N2O inhalation there was no significant difference in mean CBF between normo- and hypocapnia. However, during hypocapnia, but not during normocapnia, N2O inhalation significantly changed the distribution of regional CBF. Compared with hypocapnia without N2O, flow increased through the frontal (143%), parietal (140%) and temporal (133%) regions as well as through insula (151%), basal ganglia (145%) and thalamus (133%). In isolated human pial arteries, addition of N2O changed neither basal tension, nor the contraction elicited by prostaglandin F2α. Inhalation of 50% N2O increased global CBF mainly by augmenting flow in frontal brain structures. In contrast, changes in carbon dioxide without N2O affected CBF uniformly in the brain. The uneven change in distribution of the CBF when N2O was added during hypocapnia, the reduced carbon dioxide response, and the lack of effect of N2O on isolated human pial arteries suggest that N2O may increase metabolism in selected brain areas.

IT 10024-97-2, Nitrous oxide, biological studies
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(effects of nitrous oxide on human regional cerebral blood flow and isolated pial arteries)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L71 ANSWER 25 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1985:568448 HCAPLUS Full-text
DOCUMENT NUMBER: 103:168448
ORIGINAL REFERENCE NO.: 103:26915a,26918a
TITLE: Selective absorption of noble gases in freon-12 at low temperatures and atmospheric pressure
AUTHOR(S): Henrich, E.; Huefner, R.; Weirich, F.; Bumiller, W.; Wolff, A.
CORPORATE SOURCE: Inst. Heisse Chem., Kernforschungszent. Karlsruhe, Karlsruhe, Fed. Rep. Ger.
SOURCE: Proceedings of the DOE Nuclear Airborne Waste Management and Air Cleaning Conference (1985), Volume Date 1984, 18th(2), 959-81
CODEN: PDNCEP; ISSN: 0891-0057
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A selective absorption process for the removal of noble gases from the dissolver off-gas in a reprocessing plant was developed. The process uses freon-12 as the solvent and operates at low temps. and atmospheric pressure. The solubility of various off-gas components (N2, O2, Ar, Kr, Xe, CH4, N2O, CO2, NO) was determined at temps. between -158 and -30° as a basis for modeling the process, which operates with 2 absorption columns. The inactive Xe plus small amts. of 14CO2, N2O and traces of Rn are absorbed in the 1st column at absorption temps. of .apprx.120°. The radioactive Kr is removed in the 2nd column at absorption temps. of .apprx.-150°. The feed-gas to the 1st absorption column is subcooled to prevent the carry-over of impurities.
IT 7440-63-3, properties 10024-97-2, properties
RL: PRP (Properties)
(absorption of, on freon-12 in reactor fuel reprocessing)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L71 ANSWER 26 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1979:434716 HCAPLUS Full-text
DOCUMENT NUMBER: 91:34716
ORIGINAL REFERENCE NO.: 91:5623a,5626a
TITLE: Studies on bovine brain membrane-bound neuraminidase (sialidase)
AUTHOR(S): Sandhoff, K.; Pallmann, B.; Wiegandt, H.; Ziegler, W.
CORPORATE SOURCE: Max-Planck-Inst. Psychiatr., Munich, Fed. Rep. Ger.
SOURCE: Advances in Experimental Medicine and Biology (1978), 101(Enzymes Lipid Metab.), 463-74
CODEN: AEMBAP; ISSN: 0065-2598
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The degradation of lipophilic ganglioside GD1a by brain membrane-bound neuraminidase was enhanced by general anesthetics such as xenon, nitrous oxide, halothane, and ether, whereas the hydrolysis of the hydrophilic sialyllactitol was inhibited by these agents. Other gases such as He, H2, Ne, and N2 had not effect on ganglioside GD1a enzymic hydrolysis. Membrane-bound enzymes such as ATPase, 5'-nucleotidase, and adenylate cyclase, which act on water-soluble substrates, were inhibited ≤40% by xenon at 30 atmospheric Preincubation of membranes with nitrous oxide resulted in stimulation of ganglioside GD1a degradation Monosialogangliosides GM1 and GM2 strongly inhibited degradation of both ganglioside GD1a and sialyllactitol, and GA2 (gangliotriaosylceramide) only inhibited the breakdown of GD1a. General anesthetics lower the microviscosity of membranes, which apparently results in a higher lateral diffusion of ganglioside GD1a.
IT 10024-97-2, biological studies
RL: BIOL (Biological study)
(neuraminidase of brain membrane response to)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L71 ANSWER 27 OF 27 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1972:135439 HCAPLUS Full-text
DOCUMENT NUMBER: 76:135439
ORIGINAL REFERENCE NO.: 76:21899a,21902a
TITLE: Mechanism of action of anesthetic gases
AUTHOR(S): Cuthbert, A. W.
CORPORATE SOURCE: Dep. Pharmacol., Univ. Cambridge, Cambridge, UK
SOURCE: International Anesthesiology Clinics (1971), 9(3), 1-16
CODEN: IACLAV; ISSN: 0020-5907
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review of the various theories of the mechanism of anesthesia from gases such as xenon [7440-63-3] and nitrous oxide [10024-97-2]; 11 refs.
IT 10024-97-2, biological studies
RL: BIOL (Biological study)
(anesthesia from, theory of)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

=> => D STAT QUE L72
L27 1 SEA FILE=REGISTRY ABB=ON PLU=ON XENON/CN
L28 2588 SEA FILE=REGISTRY ABB=ON PLU=ON XENON
L29 2587 SEA FILE=REGISTRY ABB=ON PLU=ON L28 NOT L27
L30 1 SEA FILE=REGISTRY ABB=ON PLU=ON "NITROUS OXIDE"/CN
L31 48 SEA FILE=REGISTRY ABB=ON PLU=ON NITROUS OXIDE?/CN
L32 47 SEA FILE=REGISTRY ABB=ON PLU=ON L31 NOT L30
L33 SEL PLU=ON L27 1- CHEM : 3 TERMS
L34 50875 SEA FILE=HCAPLUS ABB=ON PLU=ON L33
L35 53583 SEA FILE=HCAPLUS ABB=ON PLU=ON L34 OR L29 OR XENON?
L36 SEL PLU=ON L30 1- CHEM : 18 TERMS
L37 33962 SEA FILE=HCAPLUS ABB=ON PLU=ON L36
L38 117226 SEA FILE=HCAPLUS ABB=ON PLU=ON L37 OR L32 OR NITROUS OXIDE/CV OR (DINITROGEN OR NITROGEN OR NITROUS)(A)OXIDE
L39 320 SEA FILE=HCAPLUS ABB=ON PLU=ON L35(L)L38
L40 4010142 SEA FILE=HCAPLUS ABB=ON PLU=ON COMPN./CV OR COMPOSITION OR MIXTURE
L41 3756 SEA FILE=HCAPLUS ABB=ON PLU=ON L40(L)L35
L42 6003 SEA FILE=HCAPLUS ABB=ON PLU=ON L40(L)L38
L43 49 SEA FILE=HCAPLUS ABB=ON PLU=ON L41 AND L42 AND L39
L44 96966 SEA FILE=HCAPLUS ABB=ON PLU=ON "MIXTURES (L) GASEOUS"/CV OR MIXTURE(2A)GAS?
L45 40 SEA FILE=HCAPLUS ABB=ON PLU=ON L39 AND L44
L46 17 SEA FILE=HCAPLUS ABB=ON PLU=ON L45 NOT L43
L47 41202 SEA FILE=HCAPLUS ABB=ON PLU=ON "INHALATION DRUG DELIVERY SYSTEMS"/CV OR INHALAT?
L49 7111 SEA FILE=HCAPLUS ABB=ON PLU=ON (VOLUME/CV OR VOLUME)(A)PERCENT
L50 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L49 AND L39
L56 31 SEA FILE=HCAPLUS ABB=ON PLU=ON L39 AND (?DRUG? OR ?MEDICIN? OR ?THERAP? OR ?PHARMAC?)
L57 31 SEA FILE=HCAPLUS ABB=ON PLU=ON L39(L)L47
L58 15 SEA FILE=HCAPLUS ABB=ON PLU=ON L35(L)L49
L59 87 SEA FILE=HCAPLUS ABB=ON PLU=ON L38(L)L49
L60 1 SEA FILE=HCAPLUS ABB=ON PLU=ON (L58 OR L59) AND L39
L61 65 SEA FILE=HCAPLUS ABB=ON PLU=ON (L46 OR L57 OR L50 OR L60 OR L56) NOT L43
L66 43340 SEA FILE=HCAPLUS ABB=ON PLU=ON ("10%" OR "11%" OR "12%" OR "13%" OR "14%" OR "15%" OR "16%" OR "17%" OR "18%" OR "19%" OR "20%" OR "21%" OR "22%" OR "23%" OR "24%" OR "25%" OR "26%" OR "27%" OR "28%" OR "29%" OR "30%")(5A)L38
L67 23820 SEA FILE=HCAPLUS ABB=ON PLU=ON ("31%" OR "32%" OR "33%" OR "34%" OR "35%" OR "36%" OR "37%" OR "38%" OR "39%" OR "40%" OR "41%" OR "42%" OR "43%" OR "44%" OR "45%" OR "46%" OR "47%" OR "48%" OR "49%" OR "50%")(5A)L38
L68 1369 SEA FILE=HCAPLUS ABB=ON PLU=ON ("10%" OR "11%" OR "12%" OR "13%" OR "14%" OR "15%" OR "16%" OR "17%" OR "18%" OR "19%" OR "20%" OR "21%" OR "22%" OR "23%" OR "24%" OR "25%" OR "26%" OR

"27%" OR "28%" OR "29%" OR "30%")(5A)L35
L69 1240 SEA FILE=HCAPLUS ABB=ON PLU=ON ("31%" OR "32%" OR "33%" OR "34%" OR "35%" OR "5%" OR "6%" OR "7%" OR "8%" OR "9%")(5A)L35
L70 36 SEA FILE=HCAPLUS ABB=ON PLU=ON (L66 OR L67) AND (L68 OR L69)

L71 27 SEA FILE=HCAPLUS ABB=ON PLU=ON L70 NOT L43
L72 55 SEA FILE=HCAPLUS ABB=ON PLU=ON L61 NOT L71

=> D IBIB ABS HITSTR L72 1-55

L72 ANSWER 1 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2008:307606 HCAPLUS Full-text
DOCUMENT NUMBER: 148:462331
TITLE: Actions of anesthetics on excitatory transmitter-gated channels
AUTHOR(S): Akk, G.; Mennerick, S.; Steinbach, J. H.
CORPORATE SOURCE: Department of Anesthesiology, Washington University School of Medicine, Saint Louis, MO, 63110, USA
SOURCE: Handbook of Experimental Pharmacology (2008), 182(Modern Anesthetics), 53-84
CODEN: HEPHD2; ISSN: 0171-2004
PUBLISHER: Springer GmbH
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review. Excitatory transmitter-gated receptors are found in three gene families: the glutamate ionotropic receptors, the Cys-loop receptor family (nicotinic and 5HT3), and the purinergic (P2X) receptors. Anesthetic drugs act on many members of these families, but in most cases the effects are unlikely to be related to clin. relevant anesthetic actions. However, the gaseous anesthetics (xenon and nitrous oxide) and the dissociative anesthetics (ketamine) have significant inhibitory activity at one type of glutamate receptor (the NMDA receptor) that is likely to contribute to anesthetic action. It is possible that some actions at neuronal nicotinic receptors may make a smaller contribution to effects of some anesthetics.

L72 ANSWER 2 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2008:85015 HCAPLUS Full-text
TITLE: Intermitted Pharmacologic Pretreatment by Xenon, Isoflurane, Nitrous Oxide, and the Opioid Morphine Prevents Tumor Necrosis Factor α-induced Adhesion Molecule Expression in Human Umbilical Vein Endothelial Cells
AUTHOR(S): Weber, Nina C.; Kandler, Jennis; Schlack, Wolfgang; Grueber, Yvonne; Fraedorf, Jan; Preckel, Benedikt
CORPORATE SOURCE: Laboratory of Experimental Intensive Care and Anesthesiology, Academic Medical Center, University of Amsterdam, Amsterdam, 1105, Neth.
SOURCE: Anesthesiology (2008), 108(2), 199-207
CODEN: ANESAV; ISSN: 0003-3022
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Background: The barrier properties of the endothelium are of critical importance during pathophysiol. processes. These barrier properties depend on an intact cytoskeleton and are regulated by cell adhesion mols. Tumor necrosis factor α (TNF-α) is known to induce cell adhesion mol. expression. In

myocardium, the protective effect by xenon and isoflurane preconditioning was found to be linked to the cytoskeleton. The authors investigated the impact of different anesthetics and morphine on TNF-α-induced endothelial cell adhesion mol. expression. Methods: Human umbilical vein endothelial cells were isolated from three different prepns. Cells were either left untreated or pretreated with xenon, nitrous oxide, isoflurane (each 0.43 min. alveolar concentration), or morphine (100 ng/mL) and stimulated with 10 ng/mL TNF-α. Reverse-transcription polymerase chain reaction and fluorescence-activated cell sorting of intracellular cell adhesion mol. 1, vascular cell adhesion mol. 1, and E-selectin were performed. Transcriptional activity of nuclear factor κB was assessed by IR electrophoretic mobility shift assay. Results: Tumor necrosis factor α significantly induced mRNA (mRNA) and protein expression of cell adhesion mols. as well as transcriptional activity of nuclear factor κB. All four agents prevented TNF-α-induced mRNA and protein expression of intracellular cell adhesion mol. 1. Vascular cell adhesion mol. 1 expression was only blocked by the inhalational anesthetics and not by morphine. None of the four agents had an effect on TNF-α induced E-selectin expression. TNF-α-induced transcriptional activity of nuclear factor κB was decreased by all four agents. Conclusion: These results suggest a protective effect of anesthetics on TNF-α-induced endothelial cell damage.

L72 ANSWER 3 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:975783 HCAPLUS Full-text
DOCUMENT NUMBER: 147:419021
TITLE: Inhalational and intravenous anesthetics-neuroprotectants or neurotoxins
AUTHOR(S): Jevtovic-Todorovic, Vesna
CORPORATE SOURCE: Department of Anesthesiology, University of Virginia Health System, Charlottesville, VA, 22908, USA
SOURCE: Neurobiological Studies (2006), 55-70. Editor(s): Ruzdijic, Sabera; Rakic, Ljubisa. Research Signpost: Trivandrum, India.
CODEN: 69JSJ9; ISBN: 81-308-0107-8
DOCUMENT TYPE: Conference; General Review
LANGUAGE: English
AB A review. Although i.v. and inhalational anesthetics have been used for many years, their mechanism of action(s) remains unclear. However, studies published in the last several decades suggest that two major mechanisms might be involved: the enhancement of inhibitory GABAergic transmission via GABAA receptors and the inhibition of excitatory neurotransmission via NMDA receptors, a subtype of glutamate receptors. Many i.v. (e.g. barbiturates, benzodiazepines, propofol, etomidate) and volatile inhalational anesthetics (e.g. isoflurane, sevoflurane, desflurane) have been shown to promote GABA transmission and some i.v. (e.g. ketamine) and inhalational anesthetics (e.g. nitrous oxide and xenon) have been shown to block NMDA receptors. Based on the fact that general anesthetics modulate the functioning of two major neurotransmitters in the mammalian brain that are crucially important in controlling neuronal survival in various brain injury syndromes, it is of no surprise that the usefulness of commonly used general anesthetics in neuroprotection has been extensively studied. Although their beneficial effects in protecting against acute neuronal damage in several animal models of brain injury have been documented, their therapeutic effectiveness, based on large-scale human studies, is much less convincing. In addition, some recent studies indicate that i.v. and inhalational anesthetics, when administered in clin. relevant doses and combinations, could be potentially

deleterious to the immature and adult mammalian brain. This review discusses pros and cons of the anesthesia-induced neuroprotection and neurotoxicity.
REFERENCE COUNT: 70 THERE ARE 70 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 4 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:926412 HCAPLUS Full-text
DOCUMENT NUMBER: 147:356129
TITLE: Therapeutic potential of neuronal two-pore domain potassium-channel modulators
AUTHOR(S): Mathie, Alistair; Veale, Emma L.
CORPORATE SOURCE: Medway School of Pharmacy, The Universities of Kent and Greenwich at Medway, Chatham Maritime Kent, ME4 4TB, UK
SOURCE: Current Opinion in Investigational Drugs (Thomson Scientific) (2007), 8(7), 555-562
CODEN: COIDAZ; ISSN: 1472-4472
PUBLISHER: Thomson Scientific
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review. Two-pore domain potassium (K2P) channels are expressed in cells throughout the body and give rise to leak potassium currents which control the excitability of these cells. Although not inhibited by classical potassium channel-blocking drugs, such as tetraethylammonium and 4-aminopyridine, K2P channels are regulated by a diverse array of pharmacol. mediators. There are six main families of K2P channels and among these certain members of the TREK family (ie, TREK-1 and TREK-2) are activated by general anesthetic agents such as halothane, xenon and nitrous oxide. In addition, all members of the TREK family are activated by neuroprotective agents, such as riluzole, polyunsatd. fatty acids and lysophospholipids, suggesting that these channels play an important role in neuroprotection. TREK channels are also inhibited by chlorpromazine, local anesthetics and the antidepressant fluoxetine. Furthermore, all members of the TASK family are inhibited by cannabinoids and local anesthetics, and TASK-3 is selectively inhibited by ruthenium red. Thus, the diversity and physiol. importance of K2P channels suggest that the development of selective compds. to target these proteins has therapeutic potential for CNS disorders such as stroke, depression and epilepsy.
REFERENCE COUNT: 82 THERE ARE 82 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 5 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:644004 HCAPLUS Full-text
DOCUMENT NUMBER: 147:79733
TITLE: Device for measurement of the concentration of xenon and a ventilatory apparatus for anesthesia using the xenon
INVENTOR(S): Daviet, Christian; Blandin, Richard; Augusto, Angelo
PATENT ASSIGNEE(S): L'Air Liquide Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude, Fr.
SOURCE: Fr. Demande, 30pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

FR 2894487 A1 20070615 FR 2005-53863 20051214
PRIORITY APPLN. INFO.: FR 2005-53863 20051214
AB A device for determination of the xenon concentration in gas mixture intended to be administered to a patient, comprises one or more addnl. gas components such as: oxygen, nitrogen, nitrogen protoxide, carbon dioxide, one or more halogen gas. The device also comprises means for determination of the concentration of the majority of the principal components other than xenon and nitrogen. A schematic drawing of the device is depicted (no data).
IT 10024-97-2, Nitrogen oxide (N2O),
biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(device for measurement of concentration of xenon and ventilatory apparatus for anesthesia using xenon)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 6 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:644002 HCAPLUS Full-text
DOCUMENT NUMBER: 147:79732
TITLE: Device for measurement of the concentration of xenon and a ventilatory apparatus for anesthesia using xenon
INVENTOR(S): Daviet, Christian; Blandin, Richard; Kissi, Noureddine
PATENT ASSIGNEE(S): L'Air Liquide Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude, Fr.
SOURCE: Fr. Demande, 33pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2894486	A1	20070615	FR 2005-53862	20051214
WO 2007068849	A3	20071018	WO 2006-FR51326	20061211

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW
RW: AP, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, EA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, EP, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, OA, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: FR 2005-53862 A 20051214
AB A ventilatory anesthesia apparatus for administration of xenon gas is claimed. It comprises a principal gas line which can be opened or closed and is

connected to an inhalation line to deliver a gas mixture containing xenon to the patient and an exhalation line to remove the gas mixture exhaled by the patient, means of xenon supply connected to feed the inhalation line of the principal gas line, and means of determination of xenon concentration A schematic drawing of the apparatus is presented (no data).
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 7 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:387804 HCAPLUS Full-text
DOCUMENT NUMBER: 146:514298
TITLE: Mechanism of xenon induced preconditioning in cardiac and neuronal tissue
AUTHOR(S): Lu, Huang-wei; Wang, Jun-ke
CORPORATE SOURCE: Department of Anesthesiology, the First Affiliated Hospital, China Medical University, Shenyang Liaoning, 110001, Peop. Rep. China
SOURCE: Zhongguo Xinyao Yu Linchuang Zazhi (2007), 26(2), 147-151
CODEN: ZXYLBE; ISSN: 1007-7669
PUBLISHER: Zhongguo Xinyao Yu Linchuang Zazhi Zazhishe
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Xenon is an anesthetic gas, which several advantages over nitrous oxide and other potent inhalation agents clin. use including profound analgesia, extremely low blood/gas partition coefficient (rapid onset and offset of its action), less cardiovascular depression and no air population. Xenon's cardioprotective and neuroprotective effects have been proven in a series of studies especially providing the protection for reperfusion of the ischemic myocardium and neural tissue; and furthermore recently demonstration the prevention of cellular damage by its mimicry ischemic preconditioning (IPC). The mechanism of the cardioprotective and neuroprotective effects induced by xenon may probably be brought through the inhibition of protein kinase C (PKC) signal pathway or N-methyl-D-asparte (NMDA) receptors.
REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 8 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:1345034 HCAPLUS Full-text
DOCUMENT NUMBER: 146:114882
TITLE: Protein crystallography under xenon and nitrous oxide pressure: comparison with in vivo pharmacology studies and implications for the mechanism of inhaled anesthetic action
AUTHOR(S): Colloc'h, Nathalie; Sopkova-de Oliveira Santos, Jana; Retailleau, Pascal; Vivares, Denis; Bonnete, Francoise; d'Estainto, Beatrice Langlois; Gallois, Bernard; Brisson, Alain; Risso, Jean-Jacques; Lemaire, Marc; Prange, Thierry; Abraini, Jacques H.
CORPORATE SOURCE: Centre CYCERON, UMR 6185, Universite de Caen - CNRS, Caen, 14074, Fr.
SOURCE: Biophysical Journal (2007), 92(1), 217-224
CODEN: BIOJAU; ISSN: 0006-3495
PUBLISHER: Biophysical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In contrast with most inhalational anesthetics, the anesthetic gases xenon (Xe) and nitrous oxide (N2O) act by blocking the N-methyl-D-aspartate (NMDA)

receptor. Using x-ray crystallog., we examined the binding characteristics of these two gases on two soluble proteins as structural models: urate oxidase, which is a prototype of a variety of intracellular globular proteins, and annexin V, which has structural and functional characteristics that allow it to be considered as a prototype for the NMDA receptor. The structure of these proteins complexed with Xe and N2O were determined One N2O mol. or one Xe atom binds to the same main site in both proteins. A second subsite is observed for N2O in each case. The gas-binding sites are always hydrophobic flexible cavities buried within the monomer. Comparison of the effects of Xe and N2O on urate oxidase and annexin V reveals an interesting relationship with the in vivo pharmacol. effects of these gases, the ratio of the gas-binding sites' volume expansion and the ratio of the narcotic potency being similar. Given these data, we propose that alterations of cytosolic globular protein functions by general anesthetics would be responsible for the early stages of anesthesia such as amnesia and hypnosis and that addnl. alterations of ion-channel membrane receptor functions are required for deeper effects that progress to "surgical" anesthesia.

IT 10024-97-2, Nitrous oxide, biological studies
RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(protein crystallog. under xenon and N2O pressure: comparison with in vivo pharmacol. studies and implications for mechanism of inhaled anesthetic action)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 59 THERE ARE 59 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 9 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:1133222 HCAPLUS Full-text
DOCUMENT NUMBER: 146:483902
TITLE: Krypton/xenon recovery ideas
AUTHOR(S): Anon.
CORPORATE SOURCE: USA
SOURCE: IP.com Journal (2006), 6(9B), 14 (No. IPCOM000140576D), 13 Sep 2006
CODEN: IJPOBX; ISSN: 1533-0001
PUBLISHER: IP.com, Inc.
DOCUMENT TYPE: Journal; Patent
LANGUAGE: English
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
IP 140576D		20060913		

PRIORITY APPLN. INFO.: IP 2006-140576D 20060913

AB The starting point of krypton/xenon recovery is a feed purge stream, which is enriched with Kr/Xe and also contains other components having higher b.ps. than oxygen. This purge stream needs to be further processed to increase the rare gas content. The use of feed adsorbers upstream of the raw column has often been suggested to eliminate heavy hydrocarbons and CO2/N2O. The pressurized raw column bottoms stream would then be warmed and passed to a

catalytic reactor where hydrocarbons would be reacted with oxygen. The pressurized overhead Kr lean oxygen stream from the raw column could be condensed to provide boil-up at a suitable place in the ASU/rare gas system and the oxygen condensate could be used as raregas lean LOX product.

IT 10024-97-2, Dinitrogen oxide, processes
RL: REM (Removal or disposal); PROC (Process)
(krypton/xenon recovery)

RN 10024-97-2 HCAPLUS

CN Nitrogen oxide (N2O) (CA INDEX NAME)

L72 ANSWER 10 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:607170 HCAPLUS Full-text

DOCUMENT NUMBER: 146:622

TITLE: Nitrous oxide and xenon prevent amphetamine-induced carrier-mediated dopamine release in a memantine-Like rashion and protect against behavioral sensitization

AUTHOR(S): David, Helene N.; Ansseau, Marc; Lemaire, Marc; Abraini, Jacques H.

CORPORATE SOURCE: NNOXe Pharmaceuticals, Quebec, QC, Can.

SOURCE: Biological Psychiatry (2006), 60(1), 49-57
CODEN: BIPCBF; ISSN: 0006-3223

PUBLISHER: Elsevier Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Amphetamine administration induces stimulation-independent dopamine release in the nucleus accumbens (NAcc) through reverse dopamine transport, a critical neurochem. event involved in its psychostimulant action, and furthermore decreases stimulation-dependent vesicular dopamine release. These effects may involve possible indirect glutamatergic mechanisms. We investigated the effects of nitrous oxide and xenon, which possess antagonistic action at the N-methyl-D-aspartate (NMDA) receptor, on brain slices ex vivo on amphetamine-induced changes in carrier-mediated and KCl-evoked dopamine release in the NAcc, and in vivo on amphetamine-induced locomotor sensitization. Like the low-affinity NMDA receptor antagonist memantine, but not the prototypical compound MK-801, nitrous oxide and xenon at appropriate concns. blocked both the increase in carrier-mediated dopamine release and locomotor sensitization produced by amphetamine. In contrast to what has generally been found using prototypical NMDA receptor antagonists, these data regarding the effect of memantine, nitrous oxide, and xenon support the hypothesis that activation of certain NMDA receptors (possibly those containing the NR1a/NR2D subunit) in the NAcc is involved in the amphetamine-induced increase in carrier-mediated dopamine release and the development of behavioral sensitization to amphetamine. Nitrous oxide, xenon, and memantine may be of therapeutic interest for treating drug dependence.

REFERENCE COUNT: 72 THERE ARE 72 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 11 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:83687 HCAPLUS Full-text

DOCUMENT NUMBER: 145:134

TITLE: Potentially neuroprotective and therapeutic

properties of nitrous oxide and xenon
AUTHOR(S): Abraini, Jacques H.; David, Helene N.; Lemaire, Marc
CORPORATE SOURCE: Centre CYCERON, UMR 6185, Universite de Caen-CNRS, Caen, 14074, Fr.
SOURCE: Annals of the New York Academy of Sciences (2005), 1053(Neuroprotective Agents), 289-300
CODEN: ANYAA9; ISSN: 0077-8923
PUBLISHER: New York Academy of Sciences
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review. Despite the beneficial effects of prototypical glutamatergic receptor antagonists in animal models, the pharmacol. attempts by the use of such agents have met with very limited clin. success because these compds. produce adverse side effects and possess an intrinsic neurotoxicity at neuroprotective and therapeutic concns. Interestingly, nitrous oxide and xenon, which are anesthetic gases with a remarkably safe clin. profile, have been shown to be effective inhibitors of the NMDA receptor. We briefly review accumulating evidence that nitrous oxide and xenon at subanesthetic concns. may have potentially neuroprotective and therapeutic properties, with a particular focus on their beneficial effects on ischemia-induced neuronal death and amphetamine-induced sensitization. Nitrous oxide at 75-vol% and xenon up to 70-vol% reduce ischemia-induced neuronal death induced by occlusion of the middle cerebral artery in rodents, and decrease NMDA-induced Ca2+ influx in neuronal cell cultures, a critical event involved in excitotoxicity. Nitrous oxide at 75-vol% and xenon at 50-vol% further reduced amphetamine-induced loco-motor sensitization in rodents. However, at a higher concentration of 75-vol%, xenon shows potentially neurotoxic properties and adverse side effects. Because both agents are rapidly eliminated from the body, it is plausible that their administration at appropriate subanesthetic neuroprotective and therapeutic concns. may not be associated, in contrast with prototypical NMDA receptor antagonists, with adverse side effects and potentially neurotoxicity. Finally, the possible therapeutic implications in humans are discussed.

IT 10024-97-2, Nitrous oxide, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(nitrous oxide and xenon reduced ischemia-induced neuronal death and amphetamine-induced locomotor sensitization in rodent indicating their possible neuroprotective and therapeutic properties)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 52 THERE ARE 52 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 12 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:1332547 HCAPLUS Full-text
DOCUMENT NUMBER: 144:71785
TITLE: Method and apparatus for separation of gases, especially for purification of krypton, xenon and neon by removing impurities.
INVENTOR(S): Matsuda, Kunio; Yamawaki, Masaya; Ishihara, Yoshio
PATENT ASSIGNEE(S): Taiyo Nippon Sanso Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005349332	A	20051222	JP 2004-174210	20040611
PRIORITY APPLN. INFO.:			JP 2004-174210	20040611

AB In title method comprising separation/removal of impurities, e.g., NOx, NH3, O2, N2, water vapor, etc., from a gas mixture containing Kr, Xe and/or Ne, the following processes are included: (1) denitration for converting NOx into N2 and water vapor, (2) contacting 1st adsorbent with denitrated gas for removal of NH3 and water vapor by adsorption, (3) contacting 2nd adsorbent with 1st adsorbent-contacted gas for adsorption of gas components Kr, Xe and/or Ne, and discharging the 2nd adsorbent unadsorbed impurities, and (4) desorbing the 2nd adsorbent adsorbed gas components, i.e., Kr, Xe and/or Ne. The above stated gas mixture can be waste gas discharged from a semiconductor manufacture device, etc.

L72 ANSWER 13 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:366863 HCAPLUS Full-text
DOCUMENT NUMBER: 143:1073
TITLE: Effect of xenon on elevated intracranial pressure as compared with nitrous oxide and total intravenous anesthesia in pigs
AUTHOR(S): Schmidt, M.; Marx, T.; Armbruster, S.; Reinelt, H.; Schirmer, U.
CORPORATE SOURCE: Department Cardiac Anesthesia, University of Ulm, Ulm, Germany
SOURCE: Acta Anaesthesiologica Scandinavica (2005), 49(4), 494-501
CODEN: AANEAB; ISSN: 0001-5172
PUBLISHER: Blackwell Publishing Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Background: Xenon in low concns. has been investigated in neuroradiol. to measure cerebral blood flow (CBF). Several reports have suggested that inhalation of Xenon might increase intracranial pressure (ICP) by increasing the cerebral blood flow and blood volume, raising concerns about using Xenon as an anesthetic in higher concns. for head-injured patients. A porcine study is presented in which the effects of inhaled 75% Xenon on elevated ICP, cerebral perfusion pressure and the efficacy of hyperventilation for ICP treatment were compared with nitrous oxide anesthesia and total i.v. anesthesia (TIVA). Methods: Twenty-one pentobarbital-anesthetized pigs (age: 12-16 wk) were randomly assigned to three groups to receive either 4h of Xenon-oxygen ventilation, nitrous oxide-oxygen ventilation or air-oxygen (75%/25%) ventilation, resp. After instrumentation for parenchymal ICP measurement and ICP manipulation, an epidurally placed 6-F balloon catheter was inflated until a target ICP of 20 mmHg was achieved. After 4 h of anesthesia hyper- and hypoventilation maneuvers were performed and consecutive ICP and CBF changes were investigated. Results: Intracranial pressure and CBF increased significantly in the nitrous oxide group as compared with the controls. There was no increase of ICP or CBF in the Xenon or control group. Intracranial pressure changed in all three groups corresponding to hyper- and

hypoventilation. Conclusions: During Xenon anesthesia, elevated ICP is not increased further and is partially reversible by hyperventilation. Our study suggests that inhalation of 75% Xenon seems not to be contraindicated in patients with elevated ICP.

IT 7440-63-3, Xenon, biological studies 10024-97-2, Nitrous oxide, biological studies
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(xenon showed no significant increase of intracranial pressure and cerebral blood flow compared with nitrous oxide and total i.v. anesthesia in pig)

RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 14 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:275255 HCAPLUS Full-text
DOCUMENT NUMBER: 142:322775
TITLE: Use of a gas for the manufacture of an agent for diagnosing coronary perfusion
INVENTOR(S): Piros, David
PATENT ASSIGNEE(S): Aga Ab, Swed.
SOURCE: Eur. Pat. Appl., 11 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1518560	A1	20050330	EP 2003-445106	20030926
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
WO 2005030262	A1	20050407	WO 2004-EP10716	20040924
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,				

EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: EP 2003-445106 A 20030926

AB Use of a gas, or gas precursor, which is of such a nature that it is detectable via the expired breath from a mammal, for the manufacture of a diagnostically acceptable, injectable diagnosing agent for diagnosing coronary perfusion in said mammal, including man is described. The gas is selected from nitrous oxide, a noble gas, preferably krypton or xenon, a lower hydrocarbon, preferably ethane, ethene, propene or acetylene, sulfur hexafluoride, and acetone. The gas precursor is a liquid, i.e., a fluorinated lower hydrocarbon or hydrocarbon derivative, preferably sevoflurane. The gas or gas precursor is dissolved in a diagnostically acceptable liquid, such as Ringer's solution-acetate, a NaCl aqueous solution, blood or artificial blood and administrated through a catheter into a coronary artery.

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 15 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:275254 HCAPLUS Full-text

DOCUMENT NUMBER: 142:322774

TITLE: Use of a gas for the manufacture of a monitoring agent for diagnosing passage through the intestinal tract or exocrine function of the pancreas

INVENTOR(S): Hahn, Robert

PATENT ASSIGNEE(S): Aga Ab, Swed.

SOURCE: Eur. Pat. Appl., 11 pp.
CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1518559	A1	20050330	EP 2003-445105	20030926
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
WO 2005030263	A1	20050407	WO 2004-EP10717	20040924
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

PRIORITY APPLN. INFO.: EP 2003-445105 A 20030926

AB Use of a gas or gas precursor, which is of such a nature that it is detectable via the expired breath from a mammal, for the manufacture of a diagnostically acceptable monitoring agent for diagnosing passage through the gastrointestinal tract or exocrine function of the pancreas in said mammal, including man is described. The gas is selected from nitrous oxide, a noble gas, preferably krypton or xenon, a lower hydrocarbon, preferably ethane, ethene, propene or acetylene, sulfur hexafluoride, and acetone. The gas

precursor is a liquid, i.e., a fluorinated lower hydrocarbon or hydrocarbon derivative, preferably sevoflurane or ethanol. The gas or gas precursor in the monitoring agent is dissolved or dispersed in a diagnostically acceptable liquid and encapsulated for oral administration and release at alkaline conditions. For example, a gas which is detectable in the expired breath of a patient, such as N2O, was adsorbed on a mol. sieve material that will release the gas upon contact with water. The mol. sieve material with adsorbed gas is encapsulated in a controlled release dragee material. The dragee material is of such a nature that it will be degraded and release the mol. sieve material, and hence the gas, at a specific site in the intestine, such as the ventricle, duodenum, ileum or colon, and/or at specific pH conditions, such as alkaline conditions.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 16 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:72040 HCAPLUS Full-text
DOCUMENT NUMBER: 142:385736
TITLE: Sorptive Loss of Volatile and Gaseous Anesthetics from In Vitro Drug Application Systems
AUTHOR(S): Suzuki, Takahiro; Uchida, Ichiro; Mashimo, Takashi
CORPORATE SOURCE: Department of Anesthesiology, Osaka University Medical School, Japan
SOURCE: Anesthesia & Analgesia (Hagerstown, MD, United States) (2005), 100(2), 427-430
CODEN: AACRAT; ISSN: 0003-2999
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB In in vitro pharmacol. expts., determination of effective concentration values for various anesthetics depends on understanding the exact concentration of the drugs dissolved in physiol. solns. Actual anesthetic concentration may differ from expectations because of drug adsorption, absorption or other loss, especially in tubing. We tested the hypothesis that delivered concns. of anesthetics decrease when solns. pass through laboratory tubing and investigated such loss by measuring the entering and exiting dissolved concns. of two volatile (sevoflurane and isoflurane) and two gaseous (nitrous oxide and xenon) anesthetics. We tested solns. passed through tubes (1 m × 2 mm ID × 4 mm OD) made of five different materials (glass, Teflon, polyethylene (PE), polyvinyl chloride (PVC), and silicon rubber). Exiting concns. of anesthetics were significantly reduced when they were passed through PVC (>33%) and silicon (>43%) tubes. There were no decreases in anesthetic concns. with glass, Teflon, or PE tubes. When sevoflurane solution flowed through PVC and silicon tubes, it took 20 and 30 min, resp., after start of flow until the anesthetic loss became negligible. These results indicate that frequently used PVC and silicon tubes, whereas flexible and easy to handle, have serious drawbacks when used in inhaled anesthetic pharmacol. expts.

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 17 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:755985 HCAPLUS Full-text
DOCUMENT NUMBER: 141:246651
TITLE: Noble gas-filled microcapsules for generating a shielding gas atmosphere for especially laser welding of metal workpieces
INVENTOR(S): Faerber, Mark
PATENT ASSIGNEE(S): Linde Ag, Germany

SOURCE: Ger. Offen., 6 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10309222	A1	20040916	DE 2003-10309222	20030303
PRIORITY APPLN. INFO.:			DE 2003-10309222	20030303

AB The shielding gas atmospheric at a workpiece surface is generated by using gas-filled microcapsules, which are destroyed before or during the processing of the metal workpieces to release the gas and to obtain the shielding gas atmospheric The microcapsules may consist of metal, alloys, resins, glasses, or ceramics and they are filled with a noble gas selected from Xe, or a Xe-containing gas mixture, preferably NO. The shielding gas atmospheric is applied for welding, soldering, brazing, preferably for laser remote welding of metal workpieces.

L72 ANSWER 18 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:620191 HCAPLUS Full-text
DOCUMENT NUMBER: 141:179593
TITLE: Preparation for adaptogenic therapy (variants) and method for its manufacturing
INVENTOR(S): Smetannikov, V. P.; Orlov, A. N.; Makarova, O. A.; Butakov, G. L.; Roshchin, I. N.; Dygai, A. M.; Gol'dberg, E. D.; Naumov, S. A.; Suslov, N. I.
PATENT ASSIGNEE(S): Zakrytoe Aktsionernoe Obshchestvo "Atom-Med Tsentr", Russia
SOURCE: Russ., No pp. given
CODEN: RUXXE7
DOCUMENT TYPE: Patent
LANGUAGE: Russian
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RU 2228739	C1	20040520	RU 2003-116633	20030605
PRIORITY APPLN. INFO.:			RU 2003-116633	20030605

AB The invention relates to a preparation used in adaptogenic therapy and method for it preparing The preparation is supplied with sealing package and contains fat emulsion or solid sorbent as a filling agent wherein the gaseous active component is dissolved or adsorbed and representing at least one gas among group including: xenon, krypton, nitrous oxide. Preferably, a filling agent represents fat emulsion with pH value 6.0, not less and this fat emulsion comprises fat, namely: from cattle or sheep and goats milk or other animal butter-base emulsion; or the preparation comprises vegetable oil or activated carbon, or thermoxide as a filling agent. Invention provides preparing the nontoxic preparation with enhanced capacity for regulation of body resistance under extreme effects due to humoral regulation, regulation of metabolism and psycho-emotional regulation of a patient.

L72 ANSWER 19 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:568250 HCAPLUS Full-text

DOCUMENT NUMBER: 141:82349
TITLE: Use of xenon and/or nitrous oxide in the treatment of post-ischemic cerebral cellular deterioration
INVENTOR(S): Lemaire, Marc
PATENT ASSIGNEE(S): Air Liquide Sante SA, Fr.
SOURCE: Fr. Demande, 16 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2849779	A1	20040716	FR 2003-50002	20030115
FR 2849779	B1	20060714		
CA 2453053	A1	20040715	CA 2003-2453053	20031230
EP 1438963	A1	20040721	EP 2004-300008	20040106
EP 1438963	B1	20070704		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
AT 366113	T	20070715	AT 2004-300008	20040106
ES 2289458	T3	20080201	ES 2004-300008	20040106
US 20040258766	A1	20041223	US 2004-758513	20040115
PRIORITY APPLN. INFO.:			FR 2003-50002 A	20030115

AB The invention discloses the use of nitrous oxide and/or xenon, or a donor thereof, for the manufacture of whole or part of a medicament, preferably in inhalable form, intended to treat, minimize, or prevent a post-ischemic deterioration of cerebral cells, in particular consecutive with a cerebrovascular accident. The medicament contains less than 60% in volume of xenon or up to 80% in volume of N. Moreover, the medicament contains 19-25% in volume of O and possibly of N.

IT 7440-63-3, Xenon, biological studies 10024-97-2, Nitrous oxide, biological studies
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(and donors; xenon and/or nitrous oxide for treatment of post-ischemic cerebral cellular deterioration)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 20 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:212720 HCAPLUS Full-text
DOCUMENT NUMBER: 140:332343
TITLE: Two-pore-domain K+ channels are a novel target for the anesthetic gases xenon, nitrous oxide, and cyclopropane
AUTHOR(S): Gruss, Marco; Bushell, Trevor J.; Bright, Damian P.; Lieb, William R.; Mathie, Alistair; Franks, Nicholas P.
CORPORATE SOURCE: Biophysics Section, Department of Biological Sciences, The Blackett Laboratory, Imperial College London, UK
SOURCE: Molecular Pharmacology (2004), 65(2), 443-452
CODEN: MOPMA3; ISSN: 0026-895X
PUBLISHER: American Society for Pharmacology and Experimental Therapeutics
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Nitrous oxide, xenon, and cyclopropane are anesthetic gases that have a distinct pharmacol. profile. Whereas the mol. basis for their anesthetic actions remains unclear, they behave very differently to most other general anesthetics in that they have little or no effect on GABAA receptors, yet strongly inhibit the N-methyl-D-aspartate subtype of glutamate receptors. Here we show that certain members of the two-pore-domain K+ channel superfamily may represent an important new target for these gaseous anesthetics. TREK-1 is markedly activated by clin. relevant concns. of nitrous oxide, xenon, and cyclopropane. In contrast, TASK-3, a member of this family that is very sensitive to volatile anesthetics, such as halothane, is insensitive to the anesthetic gases. We demonstrate that the C-terminal cytoplasmic domain is not an absolute requirement for the actions of the gases, although it clearly plays an important modulatory role. Finally, we show that Glu306, an amino acid that has previously been found to be important in the modulation of TREK-1 by arachidonic acid, membrane stretch and internal pH, is critical for the activating effects of the anesthetic gases.
REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 21 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2003:772932 HCAPLUS Full-text
DOCUMENT NUMBER: 140:229136
TITLE: Reduction of Ischemic Brain Damage by Nitrous Oxide and Xenon
AUTHOR(S): David, Helene N.; Leveille, Frederic; Chazalviel, Laurent; MacKenzie, Eric T.; Buisson, Alain; Lemaire, Marc; Abraini, Jacques H.
CORPORATE SOURCE: Universite de Caen-Basse Normandie, Caen, Fr.
SOURCE: Journal of Cerebral Blood Flow & Metabolism (2003), 23(10), 1168-1173
CODEN: JCBMDN; ISSN: 0271-678X
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Neuronal death after ischemia-induced brain damage depends largely upon the activation of the N-methyl-D-aspartate (NMDA) excitatory glutamate receptor that is a target for many putative neuroprotective agents. Whereas the NMDA receptors mediate ischemic brain damage, blocking them is deleterious in humans. Here, the authors investigated whether nitrous oxide or xenon, which are gaseous anesthetics with a remarkably safe clin. profile that have been recently demonstrated as effective inhibitors of the NMDA receptor, may reduce

the following: (1) ischemia-induced brain damage in vivo, when given after occlusion of the middle cerebral artery (MCAO), a condition needed to make these potentially neuroprotective agents therapeutically valuable; or (2) NMDA-induced Ca2+ influx in cortical cell cultures, a major critical event involved in excitotoxic neuronal death. The authors have shown that both nitrous oxide at 75 vol% and xenon at 50 vol% reduce ischemic neuronal death in the cortex by 70% and further decrease NMDA-induced Ca2+ influx by 30%. In addition, xenon at 50%, but not nitrous oxide at 75 vol%, further decreases ischemic brain damage in the striatum (a subcortical structure that is known to be resistant to neuroprotective interventions). However, at a higher concentration (75 vol%), xenon exhibits potentially neurotoxic effects. The mechanisms of the neuroprotective and potentially neurotoxic effects of nitrous oxide and xenon, as well as the possible therapeutic implications in humans, are discussed.

IT 7440-63-3, Xenon, biological studies 10024-97-2, Nitrous oxide, biological studies
RL: ADV (Adverse effect, including toxicity); DMA (Drug mechanism of action); PAC (Pharmacological activity); PKT (Pharmacokinetics); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(effects of nitrous oxide and xenon on brain ischemia and NMDA-induced Ca2+ influx)

RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 22 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2003:259471 HCAPLUS Full-text
DOCUMENT NUMBER: 139:270872
TITLE: Gamma-aminobutyric acid neuropharmacological investigations on narcosis produced by nitrogen, argon, or nitrous oxide
AUTHOR(S): Abraini, Jacques H.; Kriem, Badreddine; Balon, Norbert; Rostain, Jean-Claude; Risso, Jean-Jacques
CORPORATE SOURCE: UMR CNRS 6551 Mort Neuronale, Neuroprotection, Neurotransmission, Centre Cyceron, Universite de Caen, Fr.
SOURCE: Anesthesia & Analgesia (Baltimore, MD, United States) (2003), 96(3), 746-749
CODEN: AACRAT; ISSN: 0003-2999
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Inhaled anesthetics, including the gaseous anesthetics nitrous oxide and xenon, are thought to act by interacting directly with ion-channel receptors. In contrast, little is known about the mechanism of action of inert gases that show only narcotic potency at high pressures, such as nitrogen or argon. In the present study, we investigated the effects of selective γ-aminobutyric and (GABA) receptor antagonists on narcosis produced by nitrogen, argon, and nitrous oxide. Pretreatment with the competitive GABAA receptor antagonist gabazine (0.2 nmol) but not the GABAB receptor antagonist 2-hydroxysaclofen (10 nmol) increased the nitrogen and argon threshold pressure for loss-of-righting-reflex ($P < 0.005$) but had no effect on nitrous oxide narcosis. Pretreatment with the GABAA benzodiazepine receptor antagonist flumazenil (5 nmol) also increased the narcosis threshold pressure of argon ($P < 0.025$). Given that neither 2-hydroxysaclofen, gabazine, nor flumazenil at the doses used induced hyperexcitability, our results support a selective antagonism by gabazine and flumazenil of the narcotic action of nitrogen and argon. Some mechanisms of nitrogen and argon narcotic action might be similar to those of clin. inhaled anesthetics.

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 23 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:979464 HCAPLUS Full-text

DOCUMENT NUMBER: 139:191171

TITLE: Multicenter Randomized Comparison of the Efficacy and Safety of Xenon and Isoflurane in Patients Undergoing Elective Surgery

AUTHOR(S): Rossaint, Rolf; Reyle-Hahn, Matthias; Schulte am Esch, Jochen; Scholz, Jens; Scherpereel, Philippe; Vallet, Benoit; Giunta, Francesco; Del Turco, Monica; Erdmann, Wilhelm; Tenbrinck, Rob; Hammerle, Alfons F.; Nagele, Peter

CORPORATE SOURCE: Department of Anesthesiology of the University Hospital, RWTH Aachen, Aachen, Germany

SOURCE: Anesthesiology (2003), 98(1), 6-13
CODEN: ANESAV; ISSN: 0003-3022

PUBLISHER: Lippincott Williams & Wilkins

DOCUMENT TYPE: Journal

LANGUAGE: English

AB BACKGROUND: All general anesthetics used are known to have a neg. inotropic side effect. Since xenon does not have a neg. inotropic effect, it could be an interesting future general anesthetic. The aim of this clin. multicenter trial was to test the hypothesis of whether recovery after xenon anesthesia is faster compared with an accepted, standardized anesthetic regimen and that it is as effective and safe. METHOD: A total of 224 patients in six centers were included in the protocol. They were randomly assigned to receive either xenon (60%) in oxygen or isoflurane (end-tidal concentration, 0.5%) combined with nitrous oxide (60%). Sufentanil (10 μg) was i.v. injected if indicated by defined criteria. Hemodynamic, respiratory, and recovery parameters, the amount of sufentanil, and side effects were assessed. RESULTS: The recovery parameters demonstrated a statistically significant faster recovery from xenon anesthesia when compared with isoflurane-nitrous oxide. The addnl. amount of sufentanil did not differ between both anesthesia regimens. Hemodynamics and respiratory parameters remained stable throughout administration of both anesthesia regimens, with advantages for the xenon group. Side effects occurred to the same extent with xenon in oxygen and isoflurane-nitrous oxide. CONCLUSION: This first randomized controlled multicenter trial on the use of xenon as an inhalational anesthetic confirms, in a large group of patients, that xenon in oxygen provides effective and safe anesthesia, with the

advantage of a more rapid recovery when compared with anesthesia using isoflurane-nitrous oxide.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 24 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:490377 HCAPLUS Full-text
DOCUMENT NUMBER: 138:66582
TITLE: Inhaling nitrous oxide or xenon does not influence bowel wall energy balance during porcine bowel obstruction
AUTHOR(S): Pittner, Antje; Nalos, Marek; Theisen, Marc; Ploner, Franz; Brueckner, Uwe B.; Georgieff, Michael; Radermacher, Peter; Froba, Gebhard
CORPORATE SOURCE: Sektion Anasthesiologie Pathophysiologie und Verfahrensentwicklung, Universitatsklinik fuer Anasthesiologie, Ulm, Germany
SOURCE: Anesthesia & Analgesia (Baltimore, MD, United States) (2002), 94(6), 1510-1516
CODEN: AACRAT; ISSN: 0003-2999
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Xenon (Xe) is less soluble than nitrous oxide (N2O) and hence may be more suitable during bowel obstruction. Therefore, the authors compared the intestinal mech. and biochem. effects of these two gases with those of total IV anesthesia in a porcine model of small-bowel obstruction. Intestinal obstruction was induced in 33 anesthetized pigs, in 18 of which segmental ileal perfusion was reduced by partial arterial occlusion. Pigs received total IV anesthesia, Xe, or N2O (in 30% oxygen) for 4 h, and the authors determined the intraluminal pressure and volume, the arterial-ileal PCO2 gap, and the lactate and pyruvate levels in the segmental mesenteric vein. Under both exptl. conditions, Xe or N2O ventilation caused the volume to significantly increase with a concomitant significant increase in the intraluminal pressure during N2O ventilation. Regardless of the anesthesia technique, none of the biochem. variables was influenced in the animals with maintained ileal blood supply. In contrast, reducing the segmental perfusion induced pronounced alterations of all variables of bowel wall energy metabolism The type of anesthesia, however, had no further statistically significant effect. Short-term inhalation of Xe or N2O seems to have no deleterious effects on the metabolic balance of the gut wall during intestinal obstruction.
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 25 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:784268 HCAPLUS Full-text
DOCUMENT NUMBER: 137:15630
TITLE: Nitrogen at raised pressure interacts with the GABAA receptor to produce its narcotic pharmacological effect in the rat
AUTHOR(S): David, Helene N.; Balon, Norbert; Rostain, Jean-Claude; Abraini, Jacques H.
CORPORATE SOURCE: UMR CNRS 6551 "Mort Neuronale Neuroprotection, Neurotransmission", Universite de Caen-Basse Normandie, Caen, 14074, Fr.
SOURCE: Anesthesiology (2001), 95(4), 921-927
CODEN: ANESAV; ISSN: 0003-3022

PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Strong evidence supports the concept that conventional anesthetics, including inhalational agents and inert gases, such as xenon and nitrous oxide, interact directly with ion channel neurotransmitter receptors. However, there is no evidence that nitrogen, which only exhibits narcotic potency at increased pressure, may act by a similar mechanism. We compared the inhibitory and sedative effects of γ-aminobutyric acid (GABA) and nitrogen pressure on locomotor activity and striatal dopamine release in freely moving rats and investigated the pharmacol. properties of the GABA-induced and nitrogen pressure-induced narcotic action using the highly selective competitive GABAA receptor antagonist bicuculline. Intracerebroventricular GABA infusion up to 60 μmol or exposure to nitrogen pressure up to 3 MPa decreased to a similar extent striatal dopamine release ($r^2 = 0.899$, df = 4, $P < 0.01$) and locomotor activity ($r^2 = 0.996$, df = 28, $P < 0.001$). However, both agents only showed small effects on striatal dopamine release, reducing dopamine currents by only 12-13% at sedative concns. Pretreatment with bicuculline at 0.5, 1, and 2.5 pmol reduced the sedative action of GABA on locomotor activity by 10, 20, and 41%, resp. Bicuculline in the nanomole range at 1, 2.5, and 5 nmol but not in the picomole range reduced the sedative action of nitrogen pressure by 5, 37, and 73%, resp. Schild plot anal. is consistent with the fact that bicuculline is a competitive antagonist of both GABA and nitrogen at pressure. These results suggest (1) that the presynaptic effects of both GABA and nitrogen pressure on striatal dopamine transmission are modest and not mainly involved in their sedative action and (2) that nitrogen at increased pressure may interact directly with the GABAA receptor. However, because the antagonistic effect of bicuculline on nitrogen sedation only occurred at much higher bicuculline concns. than seen with GABA, it is suggested that nitrogen does not compete for the same site as GABA.
REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 26 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:529412 HCAPLUS Full-text
DOCUMENT NUMBER: 136:63377
TITLE: Respiratory effects of xenon
AUTHOR(S): Fujii, Yoshitaka
CORPORATE SOURCE: Department of Anesthesiology, University of Tsukuba Institute of Clinical Medicine, Tsakuba City, 305-8576, Japan
SOURCE: International Anesthesiology Clinics (2001), 39(2), 95-103
CODEN: IACLAV; ISSN: 0020-5907
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review with refs. on the respiratory depression effects of inhalation of xenon focusing on diaphragmatic contractility. The clin. significance and implications of the high d. and viscosity of xenon are discussed, along with its effects on the performance of some com. available respiratory flowmeters in a math. predictable way. The well-known complication of nitrous oxide (N_2O) anesthesia, diffusion hypoxia, is also discussed. The effects of xenon on airway mechanics, diaphragmatic contractility, and diffusion hypoxia are clin. minimal. However, it is possible that xenon at high concns. causes apnea.
REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 27 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:529408 HCAPLUS Full-text
DOCUMENT NUMBER: 136:63373
TITLE: Xenon: Uptake and costs
AUTHOR(S): Hanne, Pia; Marx, Thomas; Musati, Sabine; Santo, Masayuki; Suwa, K.; Morita, Shigeho
CORPORATE SOURCE: Department of Anesthesiology and Intensive Care Medicine, Kiel University, Kiel, 24105, Germany
SOURCE: International Anesthesiology Clinics (2001), 39(2), 43-61
CODEN: IACLAV; ISSN: 0020-5907
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review with refs. focuses on the uptake characteristics of xenon in comparison with other inhalation anesthetics, and the different methods of minimizing consumption and costs. Xenon behaves pharmacokinetically similar to nitrous oxide. However, xenon provides a faster equilibration of the vessel-rich group and a slower equilibration of other compartments, including gaseous spaces, compared to nitrous oxide. The lower blood solubility of xenon promotes a quick recovery, which is independent of the duration of anesthesia, and also accounts for the prolonged washout of xenon from slow compartments after anesthesia.
REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 28 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:382674 HCAPLUS Full-text
DOCUMENT NUMBER: 135:236296
TITLE: The mid-latency auditory evoked potentials predict responsiveness to verbal commands in patients emerging from anesthesia with xenon, isoflurane, and sevoflurane but not with nitrous oxide
AUTHOR(S): Goto, Takahisa; Nakata, Yoshinori; Saito, Hayato; Ishiguro, Yoshiki; Niimi, Yoshinari; Morita, Shigeho
CORPORATE SOURCE: Department of Anesthesia, Teikyo University Ichihara Hospital, Chiba, 299-0111, Japan
SOURCE: Anesthesiology (2001), 94(5), 782-789
CODEN: ANESAV; ISSN: 0003-3022
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English
AB It has recently been demonstrated that the approx. 40-Hz spectral power of the mid-latency auditory evoked potential (MLAEP) correlates well with wakefulness during desflurance or propofol anesthesia. The aim of this study was to characterize how other inhalational anesthetics affects the MLAEP as the patients regain responsiveness to simple verbal command during emergence from anesthesia. Sixty patients were randomly assigned to receive xenon, isoflurane, sevoflurane, or nitrous oxide (N2O) supplemented with epidural anesthesia. During emergence, the concentration of an anesthetic was decreased in 0.1-min. alveolar concentration (MAC) decrements from 0.8 MAC or from 70% in the case of N2O, and each new concentration was maintained for 15 min. Every 5 min during each period, the MLAEP was recorded and the patients were asked to open their eyes and squeeze and release the investigator's hand. This process was repeated until the first response to either of these commands was observed Thirteen patients were excluded because of tech. reasons. The preanesthetic MLAEP showed a periodic wave-form, where the Na-Pa-Nb complex

was the most prominent component contributing to the high energy around 29-39 Hz in the power spectrum. Emergence from xenon, isoflurane, and sevoflurane anesthesia produced similar changes in the MLAEP. The spectral power for the frequency 29 Hz or greater was severely suppressed at 0.8 MAC but significantly recovered between the concentration only 0.1 MAC higher that permitting the first response to command and that associated with the first response. In contrast, N2O hardly affected the MLAEPs, even at the concns. producing unresponsiveness. Two patients did not lose responsiveness even at the highest concentration tested (70%). The MLAEP is closely associated with responsiveness to verbal command during emergence from anesthesia with Xenon, isoflurane, and sevoflurane but not with N2O.

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 29 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:234052 HCAPLUS Full-text
DOCUMENT NUMBER: 135:175166
TITLE: Diffusion of xenon and nitrous oxide into the bowel
AUTHOR(S): Reinelt, Helmut; Schirmer, Uwe; Marx, Thomas; Topalidis, Pantelis; Schmidt, Michael
CORPORATE SOURCE: Department of Cardiac Anesthesia, University of Ulm, Ulm, 89070, Germany
SOURCE: Anesthesiology (2001), 94(3), 475-477
CODEN: ANESAV; ISSN: 0003-3022
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB N2O diffuses easily from blood into air filled spaces. Xe is also a relatively insol. gas, like N2O. Therefore, the authors measured Xe diffusion into obstructed bowel segments during Xe anesthesia and compared this with N2O and N2 diffusion. 21 Pentobarbital-anesthetized swine were randomly assigned to 3 groups to receive either Xe-O2, N2O-O2, or N2-O2 (75-25%), resp. In each animal, 4 bowel segments of 15-cm length were isolated. A pressure-measuring catheter was inserted into the lumen, and 30 mL of room air was injected into the segments. Anesthesia with the selected gas mixture was performed for 4 h. Pressure in the segments was measured continuously. The volume of gaseous bowel content was measured on completion of the study. The median volume of bowel gas in animals breathing N2O was 88.0 mL as compared with 39.0 mL with Xe anesthesia and 21.5 mL in the N2-O2 group. After 4 h of anesthesia, the intraluminal pressures in the N2O group were found to be greater than in the control group and in the Xe group. The amount of diffused gas was lower during Xe anesthesia than with N2O anesthesia but greater than with controls. Blood solubility can therefore be regarded as an important factor influencing gas diffusion into air filled cavities.

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 30 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:885068 HCAPLUS Full-text
DOCUMENT NUMBER: 135:55907
TITLE: Nitrous oxide and xenon increase the efficacy of GABA at recombinant mammalian GABAA receptors
AUTHOR(S): Hapfelmeier, Gerhard; Zieglgansberger, Walter; Haseneder, Rainer; Schneck, Hajo; Kochs, Eberhard
CORPORATE SOURCE: Department of Anesthesiology, Klinikum rechts der Isar, Technische Universitat Munchen, Munich, D-81675, Germany
SOURCE: Anesthesia & Analgesia (Baltimore) (2000), 91(6),

1542-1549
CODEN: AACRAT; ISSN: 0003-2999
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The interactions between the recombinant GABA receptor complex (GABAAR) and N2O or Xe were investigated. Human embryonic kidney cells (HEK 293) were transfected with rat cDNA for α1β2γ2L or for α1β2 recombinant GABAAR subunits. Patch clamp techniques were used in the whole-cell mode to evaluate the effect of N2O and Xe on GABA-induced currents. A piezo-driven "liquid filament switch" was used for fast application. Both N2O (100%, 29.2 mM) and Xe (100%, 3.9 mM) reversibly increased GABA-induced currents through the α1β2γ2L and the α1β2 GABAAR channels. The potentiating effect of N2O or Xe on peak currents was prominent at low GABA concns. (10-7-10-5M). The addition of N2O or Xe increased the efficacy of GABA (10-7-10-3M). Both N2O and Xe decreased the rise time (10%-90%) of the currents elicited by low GABA concns. At the concns. used, neither N2O nor Xe had an intrinsic effect. It is concluded that, like other anesthetics, both N2O and Xe increase the efficacy of GABA at the GABAAR and enhance inhibitory GABAergic synaptic transmission.

REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 31 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:755053 HCAPLUS Full-text
DOCUMENT NUMBER: 134:275632
TITLE: Effects of gaseous anesthetics nitrous oxide and xenon on ligand-gated ion channels comparison with isoflurane and ethanol
AUTHOR(S): Yamakura, Tomohiro; Harris, R. Adron
CORPORATE SOURCE: Research Fellow, Inst. for Cellular and Mol. Biol. and Lecturer, Dep. of Anesthesiology, Niigata Univ. Sch. of Med., Niigata, Japan
SOURCE: Anesthesiology (2000), 93(4), 1095-1101
CODEN: ANESAV; ISSN: 0003-3022
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Ligand-gated ion channels are considered to be potential general anesthetic targets. Although most general anesthetics potentiate the function of γ-aminobutyric acid receptor type A (GABAA), the gaseous anesthetics nitrous oxide and xenon are reported to have little effect on GABAA receptors but inhibit N-methyl-D-aspartate (NMDA) receptors. To define the spectrum of effects of nitrous oxide and xenon on receptors thought to be important in anesthesia, the authors tested these anesthetics on a variety of recombinant brain receptors. The glycine, GABAA, GABA receptor type C (GABAC), NMDA, α-amino-3-hydroxy-5- methyl-4-isoxazole propionic acid (AMPA), kainate, 5-hydroxytryptamine3 (5-HT3), and nicotinic acetylcholine (nACh) receptors were expressed in Xenopus oocytes and effects of nitrous oxide and xenon, and as equipotent concns. of isoflurane and ethanol, were studied using the two-electrode voltage clamp. Nitrous oxide (0.58 atm [atm]) and xenon (0.46 atm) exhibited similar effects on various receptors. Glycine and GABAA receptors were potentiated by gaseous anesthetics much less than by isoflurane, whereas nitrous oxide inhibited GABAC receptors. Glutamate receptors were inhibited by gaseous anesthetics more markedly than by isoflurane, but less than by ethanol. NMDA receptors were the most sensitive among glutamate receptors and were inhibited by nitrous oxide by 31%. 5-HT3 receptors were slightly inhibited by nitrous oxide. The nACh receptors were inhibited by gaseous and

volatile anesthetics, but ethanol potentiated them. The sensitivity was different between α4β2 and α4β4 nACh receptors; α4β2 receptors were inhibited by nitrous oxide by 39%, whereas α4β4 receptors were inhibited by 7%. The inhibition of NMDA and nACh receptors by nitrous oxide was noncompetitive and was slightly different depending on membrane potentials for NMDA receptors, but not for nACh receptors. Nitrous oxide and xenon displayed a similar spectrum of receptor actions, but this spectrum is distinct from that of isoflurane or ethanol. These results suggest that NMDA receptors and nACh receptors composed of β2 subunits are likely targets for nitrous oxide and xenon.

REFERENCE COUNT: 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 32 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:436991 HCAPLUS Full-text
DOCUMENT NUMBER: 133:329379
TITLE: Effect of xenon on autonomic cardiovascular control-comparison with isoflurane and nitrous oxide
AUTHOR(S): Ishiguro, Y.; Goto, T.; Nakata, Y.; Terui, K.; Niimi, Y.; Morita, S.
CORPORATE SOURCE: Department of Anesthesia, Teikyo University School of Medicine, Ichihara Hospital, Chiba, Japan
SOURCE: Journal of Clinical Anesthesia (2000), 12(3), 196-201
CODEN: JCLBE7; ISSN: 0952-8180
PUBLISHER: Elsevier Science Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The effect of xenon was clarified on the autonomic nervous system by comparing similar effects of isoflurane and nitrous oxide. Prospective, randomized study. Operating room at a university hospital. 39 ASA phys. status I and II patients scheduled for general anesthesia. Patients were randomly allocated into 1 of 3 groups and received 1 of the following inhalational anesthetics: 56% of xenon (Group X), 0.94% of isoflurane (Group I), or 70% of nitrous oxide and 0.15% of isoflurane (Group N). Phenylephrine (pressor test) and nicardipine (depressor test) were given to assess baroreflex sensitivity. Continuous blood pressure (BP) and ECG were recorded before and during anesthesia to analyze heart rate (HR) variability and baroreflex sensitivity. Power spectrum of HR variability was calculated by fast Fourier transformation and power spectrum densities at low frequency (LF: 0.04-0.15Hz) and high frequency (HF: 0.15-0.40 Hz) were compared. Baroreflex sensitivity was calculated from the slope of regression for BP changes vs. associated changes in R-R intervals. For HR variability, Group X showed lower power spectrum densities (ms2.Hz-1) in LF and HF than did Group I (LF: 0.09 vs. 0.35; HF: 0.40 vs. 0.98). Group X had the lowest baroreflex sensitivity (ms.mmHg-1) via pressor test of the 3 study groups (Group X: 2.00, Group I: 3.53, Group N: 3.78). Xenon depressed both sympathetic and parasympathetic transmission more than isoflurane at 0.8 MAC. Xenon was also suggested to be relatively vagotonic.

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 33 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:122591 HCAPLUS Full-text
DOCUMENT NUMBER: 133:38087
TITLE: Xenon does not alter cardiac function or major cation currents in isolated guinea pig hearts or myocytes
AUTHOR(S): Stowe, David F.; Rehmert, Georg C.; Kwok, Wai-Meng; Weigt, Henry U.; Georgieff, Michael; Bosnjak, Zeljko

J.
CORPORATE SOURCE: Departments of Anesthesiology and Physiology, Medical College of Wisconsin, Milwaukee, WI, USA
SOURCE: Anesthesiology (2000), 92(2), 516-522
CODEN: ANESAV; ISSN: 0003-3022
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The noble gas xenon (Xe) has been used as an inhalational anesthetic agent in clin. trials with little or no physiol. side effects. Like nitrous oxide, Xe is believed to exert minimal unwanted cardiovascular effects, and like nitrous oxide, the vapor concentration to achieve 1 min. alveolar concentration (MAC) for Xe in humans is high, i.e., 70-80%. In the current study, concns. of ≤80% Xe were examined for possible myocardial effects in isolated, erythrocyte-perfused guinea pig hearts and for possible effects on altering major cation currents in isolated guinea pig cardiomyocytes. Isolated guinea pigs hearts were perfused at 70 mmHg via the Langendorff technique initially with a salt solution at 37°. Hearts were then perfused with fresh filtered (40-μm pore) and washed canine erythrocytes diluted in the salt solution equilibrated with 20% O2 in nitrogen (control), with 20% O2, 40% Xe, and 40% N2, (0.5 MAC), or with 20% O2 and 80% Xe (1 MAC), resp. Hearts were perfused with 80% Xe for 15 min, and bradykinin was injected into the blood perfusate to test endothelium-dependent vasodilatory responses. Using the whole-cell patch-clamp technique, 80% Xe was tested for effects on the cardiac ion currents, the Na+, the L-type Ca2+, and the inward-rectifier K+ channel, in guinea pig myocytes suffused with a salt solution equilibrated with the same combinations of Xe, oxygen, and nitrogen as above. In isolated hearts, heart rate, atrioventricular conduction time, left ventricular pressure, coronary flow, oxygen extraction, oxygen consumption, cardiac efficiency, and flow responses to bradykinin were not significantly (repeated measures anal. of variance, $P > 0.05$) altered by 40% or 80% Xe compared with controls. In isolated cardiomyocytes, the amplitudes of the Na+, the L-type Ca2+, and the inward-rectifier K+ channel over a range of voltages also were not altered by 80% Xe compared with controls. Unlike hydrocarbon-based gaseous anesthetics, Xe does not significantly alter any measured elec., mech., or metabolic factors, or the nitric oxide-dependent flow response in isolated hearts, at least partly because Xe does not alter the major cation currents as shown here for cardiac myocytes. The authors' results indicate that Xe, at approx. 1 MAC for humans, has no physiol. important effects on the guinea pig heart.
REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 34 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1999:186687 HCAPLUS Full-text
DOCUMENT NUMBER: 131:13853
TITLE: Lack of effect of flurothyl, a non-anesthetic fluorinated ether, on rat brain synaptic plasma membrane calcium-ATPase
AUTHOR(S): Horn, J.-L.; Janicki, P. K.; Franks, J. J.
CORPORATE SOURCE: Department of Anesthesiology, Vanderbilt University Medical Center, Nashville, TN, USA
SOURCE: Life Sciences (1999), 64(14), PL179-PL183
CODEN: LIFSAK; ISSN: 0024-3205
PUBLISHER: Elsevier Science Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Plasma membrane Ca2+-ATPase (PMCA), a regulator of intracellular calcium, is inhibited by volatile anesthetics and by xenon and nitrous oxide. Response of

a cellular system to anesthetics, particularly to volatile agents, raises the question of non-specific, even toxic, side effects unrelated to anesthetic action. Compds. with chemical and phys. properties similar to halogenated anesthetics, but which lack anesthetic effect, have been used to address this question. The authors have compared the effects of halothane and flurothyl, a non-anesthetic fluorinated ether, on PMCA Ca2+ transport across isolated brain synaptic plasma membranes (SPM). Flurothyl, at concns. predicted by the Meyer-Overton curve to range from 0.4 to 2.6 MAC (min. alveolar concentration), had no significant on PMCA activity. In contrast, halothane, 1.3 MAC, reduced Ca2+ transport 30-40%. These findings provide further evidence for a specific effect of inhalation anesthetics on neuronal plasma membrane Ca2+-ATPase.

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 35 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1998:770750 HCAPLUS Full-text
DOCUMENT NUMBER: 130:118468
TITLE: Quadrupolar spin relaxation of 14N in NNO in collisions with various molecules
AUTHOR(S): Jameson, Cynthia J.; ter Horst, Marc A.; Jameson, A. Keith
CORPORATE SOURCE: Department of Chemistry M/C-111, University of Illinois at Chicago, Chicago, IL, 60607-7061, USA
SOURCE: Journal of Chemical Physics (1998), 109(23), 10227-10237
CODEN: JCPSA6; ISSN: 0021-9606
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Spin-lattice relaxation times were measured for the 14N relaxation of both 14N nuclei in NNO in the pure gas and in mixts. with the following buffer gases: Ar, Kr, Xe, HCl, N2, CO, CO2, CH4, CF4, and SF6. Effective collision cross sections for mol. reorientation of NNO in collisions with these ten mols. were obtained, as a function of temperature, directly from the measured relaxation times of the end 14N nucleus in the NNO mol.

IT 7440-63-3, Xenon, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(quadrupolar spin relaxation of nitrogen-14 in nitrogen oxide in collisions with various mols.)

RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

Xe

REFERENCE COUNT: 61 THERE ARE 61 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 36 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1998:649342 HCAPLUS Full-text
DOCUMENT NUMBER: 130:46981
TITLE: Anesthetic gases
AUTHOR(S): Craig, H. J. L.
CORPORATE SOURCE: Royal Victoria Hospital, Belfast, UK
SOURCE: Anaesthetic Physiology and Pharmacology (1997), 169-176. Editor(s): McCaughey, William. Churchill

Livingstone: New York, N. Y.
CODEN: 66TMAB
DOCUMENT TYPE: Conference; General Review
LANGUAGE: English
AB A review with 7 refs. Nitrous oxide, xenon, oxygen, and air are discussed.

L72 ANSWER 37 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1998:367308 HCAPLUS Full-text
DOCUMENT NUMBER: 129:144770
TITLE: Effect of xenon on central nervous system electrical activity during sevoflurane anesthesia in cats: comparison with nitrous oxide
AUTHOR(S): Utsumi, J.; Adachi, T.; Kurata, J.; Miyazaki, Y.; Shibata, M.; Murakawa, M.; Arai, T.; Mori, K.
CORPORATE SOURCE: Department of Anaesthesia, Kyoto University Hospital, Kyoto, 606-01, Japan
SOURCE: British Journal of Anaesthesia (1998), 80(5), 628-633
CODEN: BJANAD; ISSN: 0007-0912
PUBLISHER: Professional and Scientific Publications
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors have compared the effects of xenon and nitrous oxide on central nervous system (CNS) elec. activity during sevoflurane anesthesia in cats by recording the EEG (EEG), multi-unit activity of the midbrain reticular formation (R-MUA) and somatosensory evoked potentials (SEP). Basal anesthesia with 2% and 5% sevoflurane was used. With 2% sevoflurane, 70% xenon initially produced rhythmic slow waves which were followed by bursts of high-amplitude sharp waves interrupted by low amplitude slow waves on the EEG. Xenon induced an initial increase, followed by a decrease in R-MUA. Nitrous oxide 70% decreased the amplitude of the EEG activity which was associated with an increase in R-MUA. Xenon suppressed the amplitude of both the initial pos. and neg. deflections of the SEP to a greater extent than nitrous oxide. With 5% sevoflurane anesthesia, both anesthetics increased the frequency of spikes on the EEG and facilitated R-MUA. These findings indicate that xenon has a stimulatory action on CNS background activity and a suppressive action on CNS reactive capability which is more potent than that of nitrous oxide.
REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 38 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1997:678097 HCAPLUS Full-text
DOCUMENT NUMBER: 127:326429
TITLE: A comparative study of the antinociceptive action of xenon and nitrous oxide in rats
AUTHOR(S): Ohara, Akitoshi; Mashimo, Takashi; Zhang, Ping; Inagaki, Yoshimi; Shibuta, Satoshi; Yoshiya, Ikuto
CORPORATE SOURCE: Department of Anesthesiology, Osaka University Medical School, Suita, 565, Japan
SOURCE: Anesthesia & Analgesia (Baltimore) (1997), 85(4), 931-936
CODEN: AACRAT; ISSN: 0003-2999
PUBLISHER: Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We attempted to clarify the mechanism of antinociceptive action induced by xenon gas and nitrous oxide. Nitrous oxide or xenon was applied at 80% to rats inside enclosed clear plastic glass cylinders with their tails protruding

for assessment of their tail-flick responses to radiant heat. With repeated testing, there was a rapid reduction to nitrous oxide antinociception within 90 min, which was interpreted as a development of tolerance. This was not the case with xenon antinociception. The nitrous oxide antinociception was blocked by the i.p. administration of 0.1 or 1.0 mg yohimbine/kg, but not by 1.0 or 5.0 mg L659-066/kg or by 5.0 or 10 mg naloxone/kg. The xenon antinociception was not affected by any of these 3 drugs. Yohimbine and L659-066 are characterized as α2-adrenoceptor antagonists. Although yohimbine penetrates the blood-brain barrier after systemic administration, L659-066 does not penetrate it and acts peripherally. Thus, α2-adrenoceptors, but not opioid receptors, may play a key role in the antinociception induced by nitrous oxide in the central nervous system. The mechanism of xenon antinociception differs from that of nitrous oxide because it does not involve α2 nor opioid receptors. The precise mechanism of antinociceptive action of nitrous oxide and xenon remains unknown. It is still controversial whether an opioid system plays a role in the antinociception induced by nitrous oxide.

IT 7440-63-3, Xenon, biological studies 10024-97-2, Nitrous oxide, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(antinociceptive mechanism of action of xenon and nitrous oxide in rats)

RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 39 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1995:979592 HCAPLUS Full-text
DOCUMENT NUMBER: 124:106264
TITLE: Inhibition of synaptic plasma membrane Ca2+-ATPase by inhalation anesthetics and its association with mechanisms of general anesthesia.
AUTHOR(S): Franks, John J.; Janicki, Piotr K.; Horn, Jean-Louis; Singh, Gurkeerat; Sastry, Rama; Surber, Melanie J.; Janson, Victoria E.; Franks, William T.; Catlin, Robert W.; Johnson, Raymond F.
CORPORATE SOURCE: Medical Center, Vanderbilt University, Nashville, TN, 37215-2125, USA
SOURCE: Progress in Anesthetic Mechanism (1995), 3(Proceedings of the International Workshop on Anesthetic Mechanisms, 1994), 262-7
CODEN: PAMEF6; ISSN: 0919-6390
PUBLISHER: Research Group of Anesthetic Mechanism in Japan

DOCUMENT TYPE: Journal
LANGUAGE: English
AB Because of the central role of plasma membrane Ca2+-ATPase (PMCA) in maintaining Ca2+ homeostasis, we have examined the effects, after both in vitro and in vivo exposure, of several inhalation anesthetics (IA) on PMCA function in rat brain synaptic plasma membranes (SPM). We have also looked at the effects of IA on PMCA in several cell lines of neural and medullary origin. PMCA pumping activity was assessed by measurement of ATP-dependent uptake of Ca2+ by SPM vesicles. Dose-related inhibition of PMCA was observed in SPM exposed to increasing concns. of halothane and isoflurane, confirmed by anal. of variance and multiple comparison testing ($p<0.05$). Concns. of halothane and isoflurane equivalent to one MED depressed PMCA pumping to approx. 70% of control. At partial pressures of xenon and nitrous oxide equivalent to 1.3 MAC, PMCA was depressed to approx. 80% of control. PMCA in SPM from anesthetized rats was reduced to 71% of control ($p<0.01$) compared to 113% of control for the "recovered" group. C6, B104 and PC12 cells all had PMCA activity that was inhibited significantly and in a dose-related fashion by halothane at concns. ranging from 0.5 to 1.75 vol%. The rat C6 glioma cell line exhibited higher PMCA activity than other cell lines and SPM prepns. C6 cell PMCA pumping activity was inhibited significantly, in dose-related fashion by xenon at partial pressures ranging from 0.5 to 1.6 MAC equivalent An average 8.4% depression of PMCA pumping activity was observed in SPM vesicles prepared from hyperglycemic rats, compared to controls. Average halothane and xenon requirements for STZ-hyperglycemic rats were reduced to about 65% and 88% of control, resp. MED values for each IA were strongly correlated with percent of glycated Hb.
IT 7440-63-3, Xenon, biological studies 10024-97-2, Nitrous oxide, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(synaptic plasma membrane calcium-ATPase inhibition by inhalation anesthetics in relation to general anesthesia mechanism)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L72 ANSWER 40 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1995:807836 HCAPLUS Full-text
DOCUMENT NUMBER: 123:220396
ORIGINAL REFERENCE NO.: 123:39091a,39094a
TITLE: The quantitative analysis of inhalational anesthetics in forensic samples by gas chromatography/mass spectrometry/selected ion monitoring
AUTHOR(S): Maruyama, Kyoko; Takatsu, Akihiro; Obata, Toru
CORPORATE SOURCE: Dep. Legal Medicine, Jikei University School Medicine, Tokyo, 105, Japan

SOURCE: Biomedical Chromatography (1995), 9(4), 179-82
CODEN: BICHE2; ISSN: 0269-3879
PUBLISHER: Wiley
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The quant. anal. of volatile anesthetics for biomedical applications by means of gas chromatog./mass spectrometry/selected ion monitoring (GC/MS/SIM) was studied. Xenon gas was selected as an internal standard for the assay by adding to a closed system, because of its stability and inactivity. In the assay of inhalational anesthetics, isoflurane and nitrous oxide (laughing gas), in forensic samples (serum and cerebrospinal fluid), the calibration of the anesthetic was linear from 0.12 to 12 nmol/mL in isoflurane and from 30 to 300 nmol/mL in nitrous oxide. Our results suggest that this new method is suitable for the quant. anal. of inhalational anesthetics in the biomedical field.

L72 ANSWER 41 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1995:678080 HCAPLUS Full-text
DOCUMENT NUMBER: 123:102598
ORIGINAL REFERENCE NO.: 123:17987a,17990a
TITLE: Analgesic and hypnotic effects of subanesthetic concentrations of xenon in human volunteers: Comparison with nitrous oxide
AUTHOR(S): Yagi, M.; Mashimo, T.; Kawaguchi, T.; Yoshiya, I.
CORPORATE SOURCE: Department Anaesthesiology, Osaka University Medical School, Suita, 565, Japan
SOURCE: British Journal of Anaesthesia (1995), 74(6), 670-3
CODEN: BJANAD; ISSN: 0007-0912
PUBLISHER: Professional and Scientific Publications
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The purpose of this study was to examine the effects of xenon and nitrous oxide in equipotent doses of 0.3 MAC on pain threshold and auditory response time in six healthy male volunteers. Compared with 100% oxygen inhalation, xenon and nitrous oxide significantly increased the pain threshold as measured by a radiant heat algometer. There was no significant difference in analgesic effects between xenon and nitrous oxide. Xenon significantly prolonged the response time to auditory stimuli compared with 100% oxygen, but nitrous oxide did not. The inhibitory effect of xenon on the auditory response time was significantly greater than that of nitrous oxide. The same six volunteers were studied to test if naloxone antagonized analgesia induced by xenon or nitrous oxide. The analgesic effects of xenon and nitrous oxide did not differ with or without naloxone.

L72 ANSWER 42 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1995:534471 HCAPLUS Full-text
DOCUMENT NUMBER: 122:306292
ORIGINAL REFERENCE NO.: 122:55477a,55480a
TITLE: Stable inhibition of brain synaptic plasma membrane calcium ATPase in rats anesthetized with halothane
AUTHOR(S): Franks, John J.; Horn, Jean-Louis; Janicki, Piotr K.; Singh, Gurkeerat
CORPORATE SOURCE: Department Anesthesiology, Vanderbilt University Medical Center, Nashville, TN, 37232-2125, USA
SOURCE: Anesthesiology (1995), 82(1), 118-28
CODEN: ANESAV; ISSN: 0003-3022

DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors recently showed that plasma membrane Ca2+-ATPase (PMCA) activity in cerebral synaptic plasma membrane (SPM) is diminished in a dose-related fashion during exposure in vitro to halothane, isoflurane, xenon, and nitrous oxide at clin. relevant partial pressures. They have now extended their work to in vivo studies, examining PMCA pumping in SPM obtained from control rats decapitated without anesthetic exposure, from rats decapitated during halothane anesthesia, and from rats decapitated after recovery from halothane anesthesia. Three treatment groups were studied: 1) C, control rats that were decapitated without anesthetic exposure, 2) A, anesthetized rats exposed to 1 min. ED (MED) for 20 min and then decapitated, and 3) R, rats exposed to 1 MED for 20 min and then decapitated after recovery from anesthesia, defined as beginning to groom. Plasma membrane Ca2+-ATPase pumping and Ca2+-dependent ATPase hydrolytic activity, as well as sodium-calcium exchanger activity and Na+-K+-ATPase hydrolytic activity, were assessed in cerebral SPM. In addition, halothane effect on smooth endoplasmic reticulum Ca2+-ATPase (SERCA) was examined Plasma membrane Ca2+-ATPase transport of Ca2+ into SPM vesicles from anesthetized rats was reduced to 71% of control ($P < 0.01$) compared with 113% of control for the recovered group (NS). No depression by halothane of SERCA activity, sodium-calcium exchanger, or Na+-K+-ATPase activity was noted among the CAR treatment groups. Plasma membrane Ca2+-ATPase is selectively and stably inhibited in cerebral SPM from rats killed while anesthetized with halothane, compared with rats killed without anesthesia or after recovery from anesthesia. The studies described in this report, in conjunction with previously reported inhibition of PMCA activity in vitro by a wide range of anesthetic agents, indicate a relationship between inhibition of PMCA and action of inhalational anesthetics.

L72 ANSWER 43 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1995:534470 HCAPLUS Full-text
DOCUMENT NUMBER: 122:306291
ORIGINAL REFERENCE NO.: 122:55477a,55480a
TITLE: Halothane, isoflurane, xenon, and nitrous oxide inhibit calcium ATPase pump activity in rat brain synaptic plasma membranes
AUTHOR(S): Franks, John J.; Horn, Jean-Louis; Janicki, Piotr K.; Singh, Gurkeerat
CORPORATE SOURCE: Department Anesthesiology, Vanderbilt University Medical Center, Nashville, TN, 37232-2125, USA
SOURCE: Anesthesiology (1995), 82(1), 108-17
CODEN: ANESAV; ISSN: 0003-3022
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Perturbation of neuronal calcium homeostasis may alter neurotransmission in the brain, a phenomenon postulated to characterize the anesthetic state. Because of the central role of plasma membrane Ca2+-ATPase (PMCA) in maintaining Ca2+ homeostasis, the authors examined the effect of several inhalational anesthetics on PMCA function in synaptic plasma membranes (SPM) prepared from rat brain. Ca2+-ATPase pumping activity was assessed by measurement of ATP-dependent uptake of Ca2+ by SPM vesicles. ATPase hydrolytic activity was assessed by spectrophotometric measurement of inorg. phosphate (Pi) released from ATP. For studies of anesthetic effects on PMCA activity, Ca2+ uptake or Pi release was measured in SPM exposed to halothane, isoflurane, xenon, and nitrous oxide at partial pressures ranging from 0 to 1.6 MAC equivalent Halothane and isoflurane exposures were carried out under a gassing hood. For xenon and nitrous oxide exposures, samples were incubated

in a pressure chamber at total pressures sufficient to provide anesthetizing partial pressures for each agent. Dose-related inhibition of Ca2+-ATPase pumping activity was observed in SPM exposed to increasing concns. of halothane and isoflurane, confirmed by ANOVA and multiple comparison testing ($P < 0.05$). Concns. of halothane and isoflurane equivalent to one min. ED (MED) depressed PMCA pumping approx. 30%. Xenon and nitrous oxide also inhibited Ca2+ uptake by SPM vesicles. At partial pressures of these two gases equivalent to 1.3 MAC, PMCA was inhibited approx. 20%. Hydrolysis of ATP by SPM fractions was also inhibited in a dose-related fashion. An additive effect occurred when 1 vol% of halothane was added to xenon or nitrous oxide at partial pressures equivalent to 0-1.6 MAC for the latter two agents. Plasma membranes Ca2+-ATPase is significantly inhibited, in a dose-related manner, by clin. relevant partial pressures of halothane, isoflurane, xenon, and nitrous oxide. Furthermore, these anesthetics inhibit PMCA activity in accordance with their known potencies, and an additive effect was observed How inhalational anesthetics inhibit the PMCA pump is not known at this time. It is noteworthy that the only shared characteristic of this group of agents of widely different structure is anesthetic action. The relevance of this dual commonality, anesthetic action and PMCA inhibition, to actual production of the anesthetic state remains to be determined

L72 ANSWER 44 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1993:183290 HCAPLUS Full-text
DOCUMENT NUMBER: 118:183290
ORIGINAL REFERENCE NO.: 118:31191a,31194a
TITLE: Effect of nitrous oxide on cerebral blood flow in normal humans
AUTHOR(S): Field, L. M.; Dorrance, D. E.; Krzeminska, E. K.; Barsoum, L. Z.
CORPORATE SOURCE: Dep. Anaesth., Brook Gen. Hosp., London, SE18 4LW, UK
SOURCE: British Journal of Anaesthesia (1993), 70(2), 154-9
CODEN: BJANAD; ISSN: 0007-0912
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We have studied the effect of nitrous oxide on cerebral hemodynamics in 24 healthy male volunteers. Hemispherical cerebral blood flow (CBF) was measured using the xenon-133 inhalation technique, blood flow velocities in the right middle cerebral artery were calculated using transcranial Doppler ultrasound and the pulsatility index (PI) - the inverse of which is theor. proportional to flow in the vessel under investigation - was derived from anal. of the spectrally analyzed velocity pulse wave form obtained from the middle cerebral artery. Each variable was measured with the subject inhaling 100% oxygen (1st baseline), 30% nitrous oxide in oxygen, 100% oxygen (2nd baseline) and 60% nitrous oxide in oxygen. CBF was significantly greater with 30% ($0.01 > P > 0.001$) and 60% nitrous oxide ($P < 0.001$) compared with baseline, although the difference between 30% and 60% nitrous oxide was not significant. Changes in 1/PI correlated closely with those in hemispherical CBF. Blood flow velocities increased significantly with 30% ($P < 0.001$) and 60% nitrous oxide ($0.005 > P > 0.001$), the difference between 30% and 60% nitrous oxide also being significant ($0.005 > P > 0.001$). We observed a plateau in the change in CBF caused by nitrous oxide and suggest that this may be explained by activation of intact autoregulative mechanisms in healthy human brain.

L72 ANSWER 45 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1991:135383 HCAPLUS Full-text
DOCUMENT NUMBER: 114:135383

ORIGINAL REFERENCE NO.: 114:22771a
TITLE: Method and apparatus for analyzing gas mixtures involving mass spectrometry
INVENTOR(S): Federer, Werner; Villinger, Johannes
PATENT ASSIGNEE(S): V und F Analyse- und Messtechnik G.m.b.H., Austria
SOURCE: U.S., 6 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4975576	A	19901204	US 1989-313977	19890113
AT 8701226	A	19900215	AT 1987-1226	19870514
AT 404882	B	19990325		
EP 290711	A1	19881117	EP 1987-890178	19870720
EP 290711	B1	19910502		
EP 290711	B2	19980715		
R: CH, DE, FR, GB, IT, LI, SE				
WO 8809052	A1	19881117	WO 1988-AT26	19880504
W: JP, US				
JP 08021364	B	19960304	JP 1988-503794	19880504

PRIORITY APPLN. INFO.: AT 1987-1226 A 19870514
WO 1988-AT26 W 19880504

AB For identifying the concentration of individual types of mols. in a gas mixture, the sample gas mixture is subjected to a selective pre-treatment and the product of this pre-treatment is then analyzed using mass spectrometry. For sep. concentration identification of mols. having identical mol. mass, the gas mixture is ionized with primary ions that have an internal energy slightly above that required for generating product ions representing the resp. type of mol. of interest and that have a pulse energy of such an amount that the kinetic effect on the ionization is negligible in comparison to the influence of the internal energy. The mass-spectrometric study then supplies the desired concentration of the individual type of mol. in a simple and precise fashion.

IT 10024-97-2, Nitrogen oxide (N2O),
analysis
RL: ANST (Analytical study)
(separation of, by selective ionization of xenon ions, for mass spectrometry)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L72 ANSWER 46 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1989:143090 HCAPLUS Full-text
DOCUMENT NUMBER: 110:143090
ORIGINAL REFERENCE NO.: 110:23487a,23490a
TITLE: Chromatographic separation and purification of xenon-133
AUTHOR(S): Jao, Yun; Cheng, Wu Long; Ting, Gann

CORPORATE SOURCE: Inst. Nucl. Energy Res., At. Energy Counc., Lung-Tan, 32500, Taiwan
SOURCE: Journal of Chromatography (1989), 462, 191-204
CODEN: JOCRAM; ISSN: 0021-9673
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A process was developed for the separation of 133Xe from a fission product gas mixture, consisting in collection of fission noble gases with a charcoal cold trap and purification and dispensation of Xe by chromatog. separation using activated charcoal as adsorbent. Impurities such as H, O, oxides of N and Kr are almost completely removed from the Xe product. Analyses of the fission gas components were performed by gas chromatog. The purity and yield of the product are satisfactory for domestic requirements in nuclear medical applications.

L72 ANSWER 47 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1985:585454 HCAPLUS Full-text
DOCUMENT NUMBER: 103:185454
ORIGINAL REFERENCE NO.: 103:29751a,29754a
TITLE: Recovery and purification of xenon-133 as a by-product of molybdenum-99 production using Linde 5A molecular sieve
AUTHOR(S): Briden, N. A.; Speranzini, R. A.
CORPORATE SOURCE: Chalk River Nucl. Lab., At. Energy Canada Ltd., Chalk River, ON, K0J 1J0, Can.
SOURCE: Proceedings of the DOE Nuclear Airborne Waste Management and Air Cleaning Conference (1985), Volume Date 1984, 18th(2), 1378-95
CODEN: PDNCEP; ISSN: 0891-0057
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The 133Xe [14932-42-4] gas from the 99Mo [14119-15-4] production facility is com. valuable but is not presently collected for sale because of the NOx contaminants in the off-gas. The 133Xe for sale must be produced in a sep. cell, where UAl targets are dissolved in NaOH. A procedure was developed for collecting and purifying the off-gas 133Xe from the 99Mo production facility. The procedure involves trapping the 133Xe/NOx gas mixts. released during dissoln. of 99Mo targets on columns containing Linde 5A mol. sieve, then pressurizing the columns with He, and eluting/separating the 133Xe and NOx chromatog.

L72 ANSWER 48 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1984:165060 HCAPLUS Full-text
DOCUMENT NUMBER: 100:165060
ORIGINAL REFERENCE NO.: 100:25005a,25008a
TITLE: Waveguide nitrous oxide laser
AUTHOR(S): Zhabotinskii, M. E.; Kuzyakov, B. A.
CORPORATE SOURCE: Inst. Radiotekh. Elektron., Moscow, USSR
SOURCE: Kvantovaya Elektronika (Moscow) (1983), 10(7), 1512-14
CODEN: KVEKA3; ISSN: 0368-7147
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB A N2O waveguide laser with the BeO discharge tube 2 mm in diameter was studied exptl. Dependences were obtained of the output radiation power on the pump c.d. and the rate of flow of a gas mixture of different component compns. The maximum power in the wavelength band of 10.8 μm was 95 mW, the average

pressure of the active medium being 2.9 kPa (the mixture of 4% Xe-12% N2O-26% N2-58% He).

IT 7440-63-3, uses and miscellaneous
RL: USES (Uses)
(nitrous oxide waveguide-type laser containing)
RN 7440-63-3 HCAPLUS
CN Xenon (CA INDEX NAME)

L72 ANSWER 49 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1983:63013 HCAPLUS Full-text
DOCUMENT NUMBER: 98:63013
ORIGINAL REFERENCE NO.: 98:9513a,9516a
TITLE: Analysis of chemical degradation products in an e-beam pumped rare gas halide laser
AUTHOR(S): Brannon, James H.
CORPORATE SOURCE: Maxwell Lab., Inc., San Diego, CA, 92123, USA
SOURCE: IEEE Journal of Quantum Electronics (1982), QE18(8), 1302-5
CODEN: IEJQA7; ISSN: 0018-9197
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Chemical degradation products created during the operation of an e-beam pumped, repetitively pulsed XeF laser with closed flow cycle capability are reported. From an initial lasing mixture of Ar/Xe/NF3, the degraded gas contained N2F2(N2F4), CO2, N oxides, CF4, and SiF4. Gaseous species were identified by their IR and UV absorption spectra. Also present was a solid material tentatively thought to consist of fluorocarbons and Al fluorides. The observed gas chemical suggests methods for improving laser performance by prevention of contaminant buildup.
IT 10024-97-2, uses and miscellaneous
RL: PRP (Properties)
(as degradation product in xenon monofluoride laser)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L72 ANSWER 50 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1979:413055 HCAPLUS Full-text
DOCUMENT NUMBER: 91:13055
ORIGINAL REFERENCE NO.: 91:2095a,2098a
TITLE: Process gas chromatography for monitoring a rare-gas separation system
AUTHOR(S): Million, J. G.
CORPORATE SOURCE: Oak Ridge Gaseous Diffusion Plant, Oak Ridge, TN, USA
SOURCE: Report (1978), K-1885, 17 pp. Avail.: NTIS
From: INIS Atomindex 1979, 10(3), Abstr. No. 427424
DOCUMENT TYPE: Report

LANGUAGE: English
AB An automatic process gas chromatograph anal. system was designed for monitoring a pilot plant absorption process used for the separation and concentration of the rare gases K and Xe. Chromatog. columns were developed which allow anal. of a wide variety of gases from simple mixts. of N, Kr, and refrigerant, to more complex mixts. containing O, N, refrigerant, CO2, N2O, CH4, Kr, and Xe.
IT 10024-97-2, analysis
RL: ANT (Analyte); ANST (Analytical study)
(determination of, in process streams for krypton and xenon separation and concentration)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L72 ANSWER 51 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1979:161588 HCAPLUS Full-text
DOCUMENT NUMBER: 90:161588
ORIGINAL REFERENCE NO.: 90:25533a,25536a
TITLE: Process gas chromatography for monitoring a rare-gas separation system
AUTHOR(S): Million, J. G.
CORPORATE SOURCE: Oak Ridge Gaseous Diffusion Plant, Oak Ridge, TN, USA
SOURCE: Report (1978), I-1885, 17 pp. Avail.: NTIS
From: Energy Res. Abstr. 1978, 3(24), Abstr. No. 56638
DOCUMENT TYPE: Report
LANGUAGE: English
AB An automatic process gas chromatog. anal. system was designed for monitoring a pilot plant absorption process used for the separation and concentration of the rare gases Kr and Xe. Chromatog. columns were developed which allow anal. of a wide variety of gases from simple mixts. of N, Kr, and refrigerant, to more complex mixts. containing O, N, refrigerant, CO2, N2O, CH4, Kr, and Xe.
IT 10024-97-2, analysis
RL: ANST (Analytical study)
(separation of, from krypton and xenon by gas chromatog.)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L72 ANSWER 52 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1976:598863 HCAPLUS Full-text
DOCUMENT NUMBER: 85:198863
ORIGINAL REFERENCE NO.: 85:31671a,31674a
TITLE: Ion-molecule association reactions involving nitrogen oxide(+) ion and hydrogen sulfide, sulfur dioxide, carbonyl sulfide, sulfur hexafluoride, nitrous oxide, carbon monoxide, or xenon
AUTHOR(S): Vanderhoff, John A.; Miller, Martin S.; Heimerl,

Joseph M.
CORPORATE SOURCE: Ballistic Res. Lab., Aberdeen Proving Ground, MD, USA
SOURCE: U. S. NTIS, AD Rep. (1976), AD-A026532, 37 pp.
Avail.: NTIS
From: Gov. Rep. Announce. Index (U. S.) 1976, 76(19), 126
CODEN: XADRCH
DOCUMENT TYPE: Report
LANGUAGE: English
AB Quant. measurements were made of the 3-body association rate coeffs. for the clustering of H2S, SO2, OCS, SF6, N2O, CO, and Xe to NO+ at 296°K. Selective photoionization of NO in NO-H2S and NO-SO2 gas mixts. resulted in the formation of a family of cluster ions. Ion mass spectra are given and interpreted for these 2 gas mixts. Rearrangement reactions occur in the NO-H2S gas mixture to produce protonated H2S pos. ions and protonated NH3 pos. ions. No rearrangement reactions were observed in the NO-SO2 mixture

L72 ANSWER 53 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1976:537076 HCAPLUS Full-text
DOCUMENT NUMBER: 85:137076
ORIGINAL REFERENCE NO.: 85:21899a,21902a
TITLE: Estimation of anesthetic solubility in blood
AUTHOR(S): Feingold, Alfred
CORPORATE SOURCE: Sch. Med., Univ. Miami, Miami, FL, USA
SOURCE: Anesthesia & Analgesia (Baltimore, MD, United States) (1976), 55(4), 593-5
CODEN: AACRAT; ISSN: 0003-2999
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The blood/gas partition coefficient (B/G) for inhalation anesthetics was determined from the equation: B/G=xW/G +yF/G, where W/G and F/G are the water/gas and fat/gas partition coeffs., resp. Factor x equaled 0.88 or 0.89 and factor y equaled 0.012 or 0.01 depending on whether Steward's (1973) or Lowe's (1969) data, resp., was used in the calcn. The mean percent differences between reported and calculated B/C for Et ether [60-29-7], trichloroethylene [79-01-6], halothane [151-67-7], isoflurane [26675-46-7], nitrous oxide [10024-97-2], and methoxyflurane [76-38-0] were within the ± 10% tolerance selected for this study. Fluroxene [406-90-6], chloroform [67-66-3], enflurane [13838-16-9], divinyl ether [109-93-3], xenon [7440-63-3], ethylene [74-85-1], and cyclopropane [75-19-4] all had more anesthetic dissolved in blood than could be accounted for by the simple calcn. The greatest discrepancy between the calculated and reported B/G occurred for cyclopropane, ethylene, xenon, divinyl ether, and enflurane.

L72 ANSWER 54 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1971:456463 HCAPLUS Full-text
DOCUMENT NUMBER: 75:56463
ORIGINAL REFERENCE NO.: 75:8903a,8906a
TITLE: Density dependence of xenon-129 NMR chemical shifts in oxygen and nitric oxide
AUTHOR(S): Jameson, Cynthia J.; Jameson, A. Keith
CORPORATE SOURCE: Dep. Chem., Univ. Illinois, Chicago, IL, USA
SOURCE: Molecular Physics (1971), 20(5), 957-9
CODEN: MOPHAM; ISSN: 0026-8976
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The O2 or NO d. dependence of 120Xe NMR chemical shifts in gas mixts. is much larger than any previously observed in the gas phase. Slopes of the plots of chemical shift vs. d. are -21,037 and -17,769 ppm/mole-cm-3 O2 or NO, resp., at 25° (slopes 3120-12,280 ppm/mole-cm-1 have been reported for 129Xe shifts in the presence of other gases).

IT 13965-99-6, properties
RL: PRP (Properties)
(nuclear magnetic resonance of, in presence of nitrogen oxide and oxygen)

RN 13965-99-6 HCAPLUS

CN Xenon, isotope of mass 129 (CA INDEX NAME)

^{129}Xe

L72 ANSWER 55 OF 55 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1970:514965 HCAPLUS Full-text

DOCUMENT NUMBER: 73:114965

ORIGINAL REFERENCE NO.: 73:18717a,18720a

TITLE: Ionic processes in the radiolysis of nitrous oxide. Effect of electron scavenger and rare gas sensitization

AUTHOR(S): Takao, Satoshi; Shida, Shoji

CORPORATE SOURCE: Lab. Phys. Chem., Tokyo Inst. Technol., Tokyo, Japan

SOURCE: Bulletin of the Chemical Society of Japan (1970), 43(9), 2766-71
CODEN: BCSJA8; ISSN: 0009-2673

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The effect of electron scavenger (SF6) on the radiolysis products of N2O was examined The sensitization of N2O by various rare gases was also measured. In the presence of an electron scavenger 3.0 was obtained for the value of -ΔG(-N2O) in good agreement with the value of G(e-) for N2O. In the expts. of Xe or Kr containing small amts. of N2O, the G(-N2O) values were nearly equal to the resp. G(e-) values for the rare gases, and the addition of SF6 to the Xe-N2O system almost completely inhibited N formation. One electron decomps. just 1 mol. of N2O. This fact can not be accounted for by the hitherto assumed mechanism, and a new mechanism involving N2O- is proposed for ionic processes in the radiolysis of N2O. In the N2O-rare gas mixts. of various compns., the sensitized yields of N2O decomposition per 100 eV energy absorbed by rare gases were divided into 2 groups, e.g., the yields from He, Ne mixts. were about twice as large as those from Ar, Kr, and Xe mixts. This result is discussed in terms of charge transfer and the Penning ionization.

IT 7440-63-3, uses and miscellaneous
RL: RCT (Reactant); RACT (Reactant or reagent)
(radiolysis of nitrous oxide sensitized by)

RN 7440-63-3 HCAPLUS

CN Xenon (CA INDEX NAME)

Xe

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=> => D STAT QUE L77
L27           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  XENON/CN
L28        2588 SEA FILE=REGISTRY ABB=ON  PLU=ON  XENON
L29        2587 SEA FILE=REGISTRY ABB=ON  PLU=ON  L28 NOT L27
L30           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  "NITROUS OXIDE"/CN
L31          48 SEA FILE=REGISTRY ABB=ON  PLU=ON  NITROUS OXIDE?/CN
L32          47 SEA FILE=REGISTRY ABB=ON  PLU=ON  L31 NOT L30
L33             SEL  PLU=ON  L27 1- CHEM :       3 TERMS
L34       50875 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L33
L35       53583 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L34 OR L29 OR XENON?
L36             SEL  PLU=ON  L30 1- CHEM :      18 TERMS
L37       33962 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L36
L38      117226 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L37 OR L32 OR NITROUS
                OXIDE/CV OR (DINITROGEN OR NITROGEN OR NITROUS)(A)OXIDE
L39         320 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L35(L)L38
L40     4010142 SEA FILE=HCAPLUS ABB=ON  PLU=ON  COMPN./CV OR COMPOSITION OR
                MIXTURE
L41        3756 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L40(L)L35
L42        6003 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L40(L)L38
L43          49 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L41 AND L42 AND L39
L44       96966 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "MIXTURES (L) GASEOUS"/CV OR
                MIXTURE(2A)GAS?
L45          40 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L39 AND L44
L46          17 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L45 NOT L43
L47       41202 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "INHALATION DRUG DELIVERY
                SYSTEMS"/CV OR INHALAT?
L49        7111 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (VOLUME/CV OR VOLUME)(A)PERCEN
                T
L50           1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L49 AND L39
L56          31 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L39 AND (?DRUG? OR ?MEDICIN?
                OR ?THERAP? OR ?PHARMAC?)
L57          31 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L39(L)L47
L58          15 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L35(L)L49
L59          87 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L38(L)L49
L60           1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L58 OR L59) AND L39
L61          65 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L46 OR L57 OR L50 OR L60 OR
                L56) NOT L43
L66       43340 SEA FILE=HCAPLUS ABB=ON  PLU=ON  ("10%" OR "11%" OR "12%" OR
                "13%" OR "14%" OR "15%" OR "16%" OR "17%" OR "18%" OR "19%" OR
                "20%" OR "21%" OR "22%" OR "23%" OR "24%" OR "25%" OR "26%" OR
                "27%" OR "28%" OR "29%" OR "30%")(5A)L38
L67       23820 SEA FILE=HCAPLUS ABB=ON  PLU=ON  ("31%" OR "32%" OR "33%" OR
                "34%" OR "35%" OR "36%" OR "37%" OR "38%" OR "39%" OR "40%" OR
                "41%" OR "42%" OR "43%" OR "44%" OR "45%" OR "46%" OR "47%" OR
                "48%" OR "49%" OR "50%")(5A)L38
L68        1369 SEA FILE=HCAPLUS ABB=ON  PLU=ON  ("10%" OR "11%" OR "12%" OR
                "13%" OR "14%" OR "15%" OR "16%" OR "17%" OR "18%" OR "19%" OR
                "20%" OR "21%" OR "22%" OR "23%" OR "24%" OR "25%" OR "26%" OR
                "27%" OR "28%" OR "29%" OR "30%")(5A)L35
L69        1240 SEA FILE=HCAPLUS ABB=ON  PLU=ON  ("31%" OR "32%" OR "33%" OR
                "34%" OR "35%" OR "5%" OR "6%" OR "7%" OR "8%" OR "9%")(5A)L35
L70          36 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L66 OR L67) AND (L68 OR L69)

L71          27 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L70 NOT L43
L72          55 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L61 NOT L71
L73          44 SEA FILE=HCAPLUS ABB=ON  PLU=ON  ("ABRAINI J"/AU OR "ABRAINI J
                H"/AU OR "ABRAINI JACQUES"/AU OR "ABRAINI JACQUES H"/AU OR
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"ABRAINI JAQUES H"/AU)
L74 687 SEA FILE=HCAPLUS ABB=ON PLU=ON "LEMAIRE M"/AU OR LEMAIRE M ?/AU OR ("LEMAIRE MARC"/AU OR "LEMAIRE MARC LIONEL"/AU)
L75 6 SEA FILE=HCAPLUS ABB=ON PLU=ON L73 AND L74
L76 16 SEA FILE=HCAPLUS ABB=ON PLU=ON (L73 OR L74) AND (L38 OR LL35)
L77 7 SEA FILE=HCAPLUS ABB=ON PLU=ON (L75 OR L76) NOT (L43 OR L71 OR L72)

=> D IBIB ABS HITSTR L77 1-7

L77 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:1039186 HCAPLUS Full-text
DOCUMENT NUMBER: 144:142769
TITLE: Nitrous Oxide Revisited: Evidence for Potent Antihyperalgesic Properties
AUTHOR(S): Richebe, Philippe; Rivat, Cyril; Creton, Cyril; Laulin, Jean-Paul; Maurette, Pierre; Lemaire, Marc; Simonnet, Guy
CORPORATE SOURCE: Department of Anesthesia and Intensive Care II, Centre Hospitalier et Universitaire de Bordeaux, Bordeaux, Fr.
SOURCE: Anesthesiology (2005), 103(4), 845-854
CODEN: ANESAV; ISSN: 0003-3022
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Background: Although opioids are unsurpassed analgesics for surgery, they also induce an N-methyl-D-aspartate-dependent enhancement of postoperative hyperalgesia. Because nitrous oxide (N2O) has anti-N-methyl-D- aspartate properties, the purpose of this study was to evaluate nitrous oxide ability to prevent such an opioid-induced hyperalgesia in rats. Methods: First, preventive effects of 50/50% N2O-O2 on the development of delayed hyperalgesia observed after inflammatory pain (hind paw carrageenan injection on D0) were examined for several days. Second, the ability of nitrous oxide (10-40%) to limit opioid-induced hyperalgesia induced by fentanyl was evaluated in nonsuffering rats. Third, antihyperalgesic effects of various nitrous oxide concns. (20-50%) were assessed in both inflammatory and incisional pain models in fentanyl-treated rats (4 × 100 μg/kg s.c.). Finally, the analgesic effect of a single dose of morphine was evaluated 24 h after fentanyl administration and nitrous oxide (D0) to assess its preventive effect on acute morphine tolerance in both nonsuffering and hind paw-incised rats. Results: When applied on D0, nitrous oxide reduced delayed hyperalgesia induced by inflammation. Exposure to nitrous oxide on D0 also reduced opioid-induced hyperalgesia in nonsuffering rats in a dose-dependent manner. In fentanyl-treated rats with inflammatory or incisional pain, nitrous oxide strongly limited both magnitude and duration of hyperalgesia. Moreover, nitrous oxide exposure on D0 opposed development of acute tolerance to analgesic effects of morphine administered on D1 in both nonsuffering and incised fentanyl-treated rats. Conclusions: Nitrous oxide, an N-methyl-D-aspartate receptor antagonist, prevented the enhancement of pain sensitivity induced by both nociceptive inputs and fentanyl and opposed acute morphine tolerance. Results suggest that perioperative nitrous oxide use reduces exaggerated postoperative pain and morphine consumption.
IT 10024-97-2, Nitrous oxide, biological studies
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(nitrous oxide reduced delayed hyperalgesia induced by inflammation, opioid induced hyperalgesia, prevented enhancement of pain sensitivity and administration of N2O-O2 mixture opposed acute morphine tolerance in fentanyl-treated rat)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L77 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:492125 HCAPLUS Full-text
DOCUMENT NUMBER: 143:38418
TITLE: Argon-based inhalable gaseous drug for the treatment of neurointoxications
INVENTOR(S): Lemaire, Marc; Abraini, Jacques
PATENT ASSIGNEE(S): Air Liquide Sante International, Fr.
SOURCE: Fr. Demande, 18 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2863169	A1	20050610	FR 2003-50997	20031208
FR 2863169	B1	20060210		
EP 1541156	A1	20050615	EP 2004-300830	20041201
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, BA, HR, IS, YU				
US 20050152988	A1	20050714	US 2004-7684	20041208
US 20070275089	A1	20071129	US 2007-836536	20070809
PRIORITY APPLN. INFO.:			FR 2003-50997 A	20031208
			US 2004-7684 A3	20041208

AB The invention discloses the use of argon gas to manufacture whole or part of an inhalable medicament intended to prevent or treat a neurointoxication in humans. The medicament contains argon in an effective proportion and acts on at least a cerebral receptor in order to control operation of dopamine, glutamate, serotonin, acetylcholine, taurine, GABA and/or noradrenaline neurotransmitter systems. Preferably, the voluminal proportion of argon in the gaseous medicament is 15-80%. The neurointoxication is selected from acute excitotoxicities generating a state of addiction, cerebral accidents, neurodegenerative diseases, and psychiatric or neurol. pathologies, in particular the anxiety disorders, psychosis, in particular schizophrenia, and epilepsy in its various forms.
IT 10024-97-2, Dinitrogen oxide, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(argon-based inhalable gaseous drug for treatment of neurointoxication)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L77 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:608466 HCAPLUS Full-text
DOCUMENT NUMBER: 137:119662
TITLE: Use of carbon monoxide in treating cardiovascular inflammation
INVENTOR(S): Lemaire, Marc; Lecourt, Laurent
PATENT ASSIGNEE(S): Air Liquide Sante (International), Fr.
SOURCE: Fr. Demande, 16 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2816212	A1	20020510	FR 2000-14111	20001103
PRIORITY APPLN. INFO.:			FR 2000-14111	20001103

AB The invention discloses the use of CO or a CO donor for the preparation of medicaments for the treatment of cardiovascular inflammation, especially ischemia/reperfusion syndrome, stenosis, restenosis, or platelet aggregation. The CO can be used with other agents, in particular NO. The CO administration can be performed with e.g. a stent.
IT 10024-97-2, Dinitrogen oxide, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(carbon monoxide for treatment of cardiovascular inflammation)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

L77 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:104620 HCAPLUS Full-text
DOCUMENT NUMBER: 136:156431
TITLE: Inhalable medicinal aerosol composition for pain treatment or prevention
INVENTOR(S): Lecourt, Laurent; Lescure, Franck; Lemaire, Marc
PATENT ASSIGNEE(S): Air Liquide Sante (International), Fr.; L'Air Liquide S.A.
SOURCE: Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1177793	A1	20020206	EP 2001-401947	20010719
EP 1177793	B1	20030820		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
FR 2812545	A1	20020208	FR 2000-10065	20000803
FR 2812545	B1	20030328		
EP 1317926	A1	20030611	EP 2003-290499	20010719
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
AT 247477	T	20030915	AT 2001-401947	20010719
PT 1177793	T	20031128	PT 2001-401947	20010719
ES 2202265	T3	20040401	ES 2001-401947	20010719
CA 2353364	A1	20020203	CA 2001-2353364	20010724
JP 2002104963	A	20020410	JP 2001-233326	20010801
US 20050180926	A1	20050818	US 2005-107809	20050418

PRIORITY APPLN. INFO.:	FR 2000-10065	A	20000803
	EP 2001-401947	A3	20010719
	US 2001-920806	A1	20010803

AB An aerosol inhalant containing for prevention or treatment of pain is disclosed. The gas in the aerosol in chosen from helium, oxygen, nitrogen, xenon, hydrogen, carbon monoxide, carbon dioxide, argon, krypton, nitrogen monoxide, nitrogen protoxide, hydrocarbons, fluorocarbons or mixts. thereof. The active ingredients are chosen from paracetamol, acetylsalicylic acid, arylcarboxylic acid, corticosteroids, mineralocorticostroids, non-steroidal inflammation inhibitors, codeine, morphine, and morphinomimetics (no data).

IT 10024-97-2, Nitrogen oxide (N2O),
biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(inhalable medicinal aerosol composition for pain treatment or prevention)

RN 10024-97-2 HCAPLUS

CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L77 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER:	1999:791969 HCAPLUS Full-text
DOCUMENT NUMBER:	132:60317
TITLE:	Sigmoidal admission rate-dependence of toluene narcotic potency in rats: comparison with nitrous oxide
AUTHOR(S):	Abraini, Jacques H.; Campo, Pierre; Kriem, Badreddine; Rostain, Jean-Claude; Vincent, Anne
CORPORATE SOURCE:	Laboratoire de Neurochimie Fonctionnelle et Neuropharmacologie, Universite Henri Poincare Nancy 1, Faculte des Sciences, Vandoeuvre-les-Nancy, 54506, Fr.
SOURCE:	Neuroscience Letters (1999), 275(3), 211-214 CODEN: NELED5; ISSN: 0304-3940
PUBLISHER:	Elsevier Science Ireland Ltd.

DOCUMENT TYPE: Journal
LANGUAGE: English
AB Aromatic solvents, such as toluene, can cause depression of the central nervous system functions in both solvent-exposed workers and abusers. The mechanism by which toluene produces its effects is generally thought to be similar to that produced by general anesthetics, including inert gases and alcs. However, whether lipophilic compds. indirectly influence activity by perturbing membrane lipids or bind directly to proteins remains a major question. In a recent study, the sigmoidal admission rate-dependence of inert gas anesthetic potency has been suggested to possibly reflect a direct narcotic-protein interaction. Therefore, expts. have been carried out using seven input toluene flows of 0.5, 1, 2, 3, 4, 5 and 6 l/min. Our results indicate that as the rate of toluene delivery increased, the concentration of toluene required to produce anesthetic effects increased. Although this was fitted relatively well with linear regression, this fitted better when using a sigmoidal model ($r = 0.998$ vs. $r = 0.971$, $P < 0.01$). In addition, comparison with previous data on nitrous oxide shows a striking similarity between plots ($r = 0.991$) which appears consistent with a similar site of action for both agents. We suggest that all classes of lipophilic agents could produce their inhibitory effects at similar "non-specific" sites of action of finite size and limited occupancy.
IT 10024-97-2, Nitrous oxide, biological studies
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(sigmoidal admission rate-dependence of toluene narcotic potency in rats and comparison with nitrous oxide)
RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L77 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1998:623509 HCAPLUS Full-text
DOCUMENT NUMBER: 130:76049
TITLE: Sigmoidal compression rate-dependence of inert gas narcotic potency in rats: implication for lipid vs. protein theories of inert gas action in the central nervous system
AUTHOR(S): Abraini, Jacques H.; Rostain, Jean-Claude; Kriem, Badreddine
CORPORATE SOURCE: Laboratoire de Neurosciences Cellulaires et Integratives, Faculte des Sciences, Universite Henri Poincare Nancy 1, Vandoeuvre-les-Nancy, 54506, Fr.
SOURCE: Brain Research (1998), 808(2), 300-304
CODEN: BRREAP; ISSN: 0006-8993
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Inert gases at raised pressure exert anesthetic effects. It is assumed that anesthesia by the inert gases is fundamentally similar to anesthesia produced by general anesthetics. However, do general anesthetics bind directly to proteins or influence activity by indirectly perturbing membrane lipids still remains a major question. Although the pressure required to achieve

anesthesia with inert gases has been suggested to exert potentially some pressure antagonism per se, this has not been studied yet to our knowledge. We investigated this possibility using nitrogen, argon, and nitrous oxide. Whatever the narcotic agent used, our results showed that the pressure of narcotic required to induce anesthetic effects increased, as compression rate increased, in a sigmoid fashion rather than in a linear fashion. Evidence for sigmoidal responses vs. linear responses depended of the narcotic potency of the anesthetic agent used (nitrogen: r2=0.973 vs. r2=0.941; argon: r2=0.971 vs. r2=0.866; nitrous oxide: r2=0.995 vs. r2=0.879). Since a linear antagonism is predicted by lipid theories, we think it likely that these findings indicate that inert gases bind to a modulatory site of a protein receptor and act as allosteric modulators. Since other workers provided evidence for binding processes using volatile anesthetics, the present findings could indicate that all classes of general anesthetics, including inert gases, could act by binding directly to proteins rather than by dissolving in some lipids of the cellular membrane.

IT 10024-97-2, Nitrous oxide, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(inert gas narcotic potency in rats in relation to protein receptor binding and membrane lipids)

RN 10024-97-2 HCAPLUS
CN Nitrogen oxide (N2O) (CA INDEX NAME)

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L77 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1996:322487 HCAPLUS Full-text
DOCUMENT NUMBER: 125:21032
TITLE: Concept of an electrolyzer for generating nitrous vapors by reduction of nitric acid
AUTHOR(S): Lemaire, M.; Bisel, I.; Comtat, M.
CORPORATE SOURCE: DRDD, CEA Marcoule, Bagnols Ceze, 30207, Fr.
SOURCE: Recents Progres en Genie des Procedes (1995), 9(42, Genie des Procedes Complexes), 303-308
CODEN: RPGPEX; ISSN: 1166-7478
PUBLISHER: Tec & Doc - Lavoisier
DOCUMENT TYPE: Journal
LANGUAGE: French

AB The selection of different technol. parameters of an electrolyzer designed for producing nitrous vapors (NO, NO2, N2O4, HNO2, and finally NOx) from the electrochem. reduction of HNO3 is related to the nature of the chemical and electrochem. phenomena occurring in the solution and at the electrodes. The laboratory studies designed to understand these phenomena show that the reduction of HNO3 results from the electron transfer coupled to chemical reactions taking place via several N-containing compds. These chemical reactions allow one to observe very large c.d. values. The observed phenomena nevertheless haver to be characterized qual. for the N-containing compds. and quant. for the chemical reactions which occur.

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=> D HIS FUL L27-


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L27           1 SEA ABB=ON  PLU=ON  XENON/CN
L28        2588 SEA ABB=ON  PLU=ON  XENON
L29        2587 SEA ABB=ON  PLU=ON  L28 NOT L27
L30           1 SEA ABB=ON  PLU=ON  "NITROUS OXIDE"/CN
L31          48 SEA ABB=ON  PLU=ON  NITROUS OXIDE?/CN
L32          47 SEA ABB=ON  PLU=ON  L31 NOT L30

     FILE 'HCAPLUS' ENTERED AT 15:45:51 ON 20 MAY 2008

     FILE 'REGISTRY' ENTERED AT 15:46:40 ON 20 MAY 2008
                SET SMARTSELECT ON
L33             SEL PLU=ON  L27 1- CHEM :       3 TERMS
                SET SMARTSELECT OFF

     FILE 'HCAPLUS' ENTERED AT 15:46:40 ON 20 MAY 2008
L34       50875 SEA ABB=ON  PLU=ON  L33
L35       53583 SEA ABB=ON  PLU=ON  L34 OR L29 OR XENON?

     FILE 'REGISTRY' ENTERED AT 15:47:57 ON 20 MAY 2008
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                SET SMARTSELECT OFF

     FILE 'HCAPLUS' ENTERED AT 15:50:41 ON 20 MAY 2008
L37       33962 SEA ABB=ON  PLU=ON  L36
L38      117226 SEA ABB=ON  PLU=ON  L37 OR L32 OR NITROUS OXIDE/CV OR (DINITROG
                EN OR NITROGEN OR NITROUS)(A)OXIDE
L39         320 SEA ABB=ON  PLU=ON  L35(L)L38
L40     4010142 SEA ABB=ON  PLU=ON  COMPN./CV OR COMPOSITION OR MIXTURE
L41        3756 SEA ABB=ON  PLU=ON  L40(L)L35
L42        6003 SEA ABB=ON  PLU=ON  L40(L)L38
L43          49 SEA ABB=ON  PLU=ON  L41 AND L42 AND L39
                D STAT QUE L43
                D IBIB ABS HITSTR L43 1-49
L44       96966 SEA ABB=ON  PLU=ON  "MIXTURES (L) GASEOUS"/CV OR MIXTURE(2A)GAS
                ?
L45          40 SEA ABB=ON  PLU=ON  L39 AND L44
L46          17 SEA ABB=ON  PLU=ON  L45 NOT L43
L47       41202 SEA ABB=ON  PLU=ON  "INHALATION DRUG DELIVERY SYSTEMS"/CV OR
                INHALAT?
L49        7111 SEA ABB=ON  PLU=ON  (VOLUME/CV OR VOLUME)(A)PERCENT
L50           1 SEA ABB=ON  PLU=ON  L49 AND L39
L56          31 SEA ABB=ON  PLU=ON  L39 AND (?DRUG? OR ?MEDICIN? OR ?THERAP?
                OR ?PHARMAC?)
L57          31 SEA ABB=ON  PLU=ON  L39(L)L47
L58          15 SEA ABB=ON  PLU=ON  L35(L)L49
L59          87 SEA ABB=ON  PLU=ON  L38(L)L49
L60           1 SEA ABB=ON  PLU=ON  (L58 OR L59) AND L39
L61          65 SEA ABB=ON  PLU=ON  (L46 OR L57 OR L50 OR L60 OR L56) NOT L43
L66       43340 SEA ABB=ON  PLU=ON  ("10%" OR "11%" OR "12%" OR "13%" OR "14%"
                OR "15%" OR "16%" OR "17%" OR "18%" OR "19%" OR "20%" OR "21%"
                OR "22%" OR "23%" OR "24%" OR "25%" OR "26%" OR "27%" OR "28%"
                OR "29%" OR "30%")(5A)L38
L67       23820 SEA ABB=ON  PLU=ON  ("31%" OR "32%" OR "33%" OR "34%" OR "35%"
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                OR "43%" OR "44%" OR "45%" OR "46%" OR "47%" OR "48%" OR "49%"
                OR "50%")(5A)L38
                D KWIC
                D KWIC L65
L68         1369 SEA ABB=ON  PLU=ON  ("10%" OR "11%" OR "12%" OR "13%" OR "14%"
                OR "15%" OR "16%" OR "17%" OR "18%" OR "19%" OR "20%" OR "21%"
                OR "22%" OR "23%" OR "24%" OR "25%" OR "26%" OR "27%" OR "28%"
                OR "29%" OR "30%")(5A)L35
L69         1240 SEA ABB=ON  PLU=ON  ("31%" OR "32%" OR "33%" OR "34%" OR "35%"
                OR "5%" OR "6%" OR "7%" OR "8%" OR "9%")(5A)L35
L70           36 SEA ABB=ON  PLU=ON  (L66 OR L67) AND (L68 OR L69)
L71           27 SEA ABB=ON  PLU=ON  L70 NOT L43
                D STAT QUE L71
                D IBIB ABS HITSTR L71 1-27
L72           55 SEA ABB=ON  PLU=ON  L61 NOT L71
                D STAT QUE L72
                D IBIB ABS HITSTR L72 1-55
L73           44 SEA ABB=ON  PLU=ON  ("ABRAINI J"/AU OR "ABRAINI J H"/AU OR
                "ABRAINI JACQUES"/AU OR "ABRAINI JACQUES H"/AU OR "ABRAINI
                JAQUES H"/AU)
L74          687 SEA ABB=ON  PLU=ON  "LEMAIRE M"/AU OR LEMAIRE M ?/AU OR
                ("LEMAIRE MARC"/AU OR "LEMAIRE MARC LIONEL"/AU)
L76           16 SEA ABB=ON  PLU=ON  (L73 OR L74) AND (L38 OR LL35)
L77            7 SEA ABB=ON  PLU=ON  (L75 OR L76) NOT (L43 OR L71 OR L72)
                D STAT QUE L77
                D IBIB ABS HITSTR L77 1-7


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